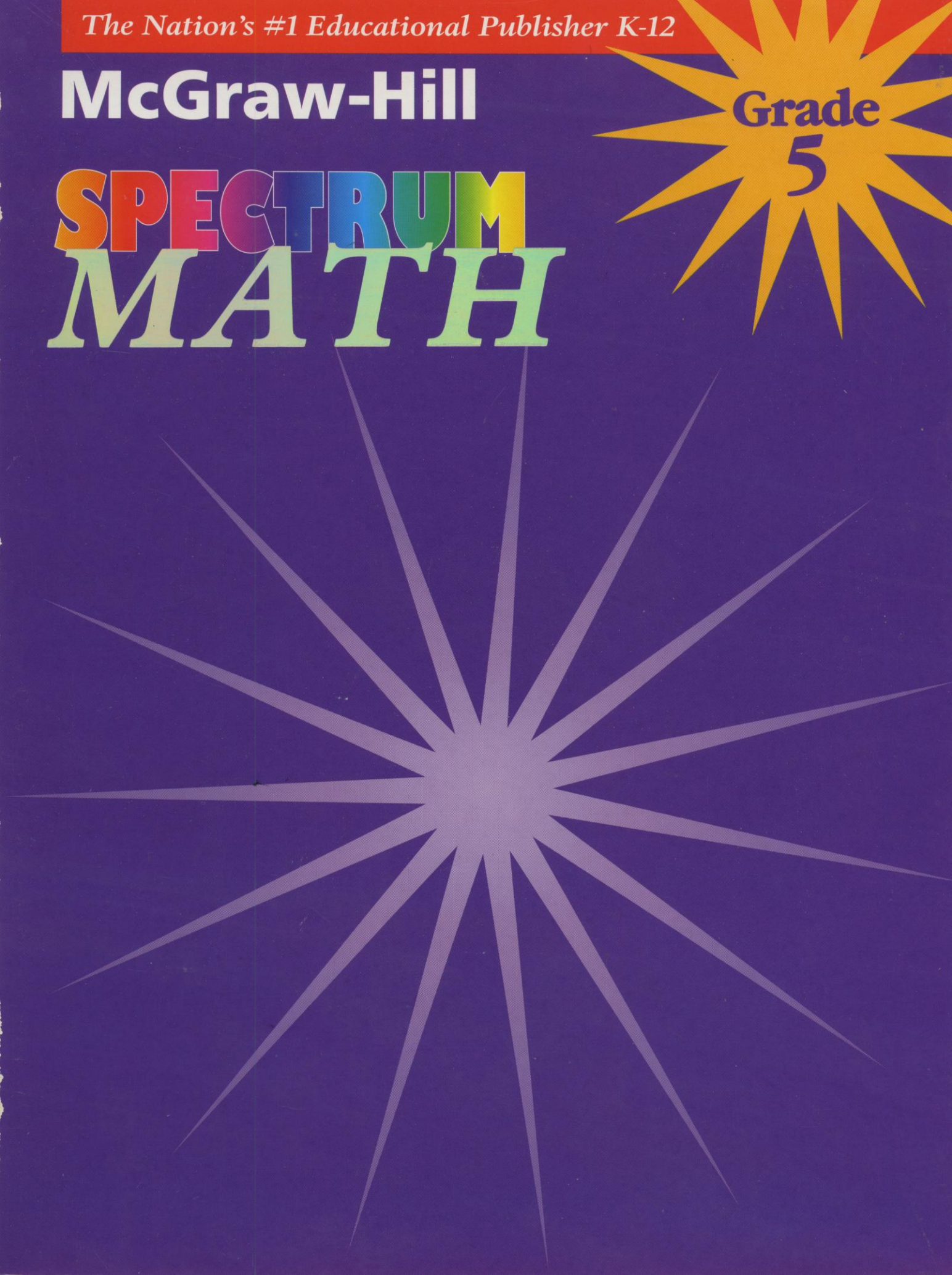


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SPECTRUM
MATH

Grade
5



MATH

Grade 5

Thomas J. Richards
Mathematics Teacher
Lamar Junior-Senior High School
Lamar, Missouri

This book is dedicated to our children — Alyx, Nathan, Fred S., Dawn, Molly, Ellen, Rashaun, Brianna, Michele, Bradley, BriAnne, Kristie, Caroline, Dominic, Corey, Lindsey, Spencer, Morgan, Brooke, Cody, Sydney — and to all children who deserve a good education and who love to learn.

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Using This Book

SPECTRUM MATHEMATICS is a non-graded, consumable series for students who need special help with the basic skills of computation and problem solving. This successful series emphasizes skill development and practice, without complex terminology or abstract symbolism. Because of the nature of the content and the students for whom the series is intended, readability has been carefully controlled to comply with the mathematics level of each book.

Features:

- A **Pre-Test** at the beginning of each chapter helps determine a student's understanding of the chapter content. The Pre-Test enables students and teachers to identify specific skills that need attention.
- **Developmental exercises** are provided at the top of the page when new skills are introduced. These exercises involve students in learning and serve as an aid for individualized instruction or independent study.
- **Abundant opportunities for practice** follow the developmental exercises.
- **Problem-solving pages** enable students to apply skills to realistic problems they will meet in everyday life.

- A **Test** at the end of each chapter gives students and teachers an opportunity to check understanding. A **Mid-Book Test**, covering Chapters 1–7, and a **Final Test**, covering all chapters, provide for further checks of understanding.
- A **Record of Test Scores** is provided on page xvi of this book so students can chart their progress as they complete each chapter test.
- **Answers** to all problems and test items are included at the back of the book.

This is the third edition of *SPECTRUM MATHEMATICS*. The basic books have remained the same. Some new, useful features have been added.

New Features:

- **Scope and Sequence Charts** for the entire Spectrum Mathematics series are included on pages iv–v.
- **Basic Facts Tests** for addition, subtraction, multiplication, and division are included on pages vii–xiv. There are two forms of each test. These may be given at any time the student or teacher decides they are appropriate.
- An **Assignment Record Sheet** is provided on page xv.

Addition Facts (Form A)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$
2.	$\begin{array}{r} 7 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +3 \\ \hline \end{array}$
3.	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$
4.	$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline \end{array}$
5.	$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline \end{array}$
6.	$\begin{array}{r} 9 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +1 \\ \hline \end{array}$
7.	$\begin{array}{r} 2 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline \end{array}$
8.	$\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$
9.	$\begin{array}{r} 7 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +8 \\ \hline \end{array}$
10.	$\begin{array}{r} 6 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$

Perfect score: 80 My score: _____

NAME _____

Addition Facts (Form B)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +4 \\ \hline \end{array}$
2.	$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$
3.	$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +9 \\ \hline \end{array}$
4.	$\begin{array}{r} 5 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +1 \\ \hline \end{array}$
5.	$\begin{array}{r} 8 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline \end{array}$
6.	$\begin{array}{r} 2 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +2 \\ \hline \end{array}$
7.	$\begin{array}{r} 1 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$
8.	$\begin{array}{r} 6 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$
9.	$\begin{array}{r} 7 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$
10.	$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +9 \\ \hline \end{array}$

Perfect score: 80 My score: _____

Subtraction Facts (Form A)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -9 \\ \hline \end{array}$
2.	$\begin{array}{r} 9 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$
3.	$\begin{array}{r} 6 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -6 \\ \hline \end{array}$
4.	$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$
5.	$\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -9 \\ \hline \end{array}$
6.	$\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -8 \\ \hline \end{array}$
7.	$\begin{array}{r} 7 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -9 \\ \hline \end{array}$
8.	$\begin{array}{r} 9 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -8 \\ \hline \end{array}$
9.	$\begin{array}{r} 11 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$
10.	$\begin{array}{r} 18 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$

Perfect score: 80 My score: _____

NAME _____

Subtraction Facts (Form B)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 10 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -5 \\ \hline \end{array}$
2.	$\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -8 \\ \hline \end{array}$
3.	$\begin{array}{r} 12 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -0 \\ \hline \end{array}$
4.	$\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$
5.	$\begin{array}{r} 12 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$
6.	$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$
7.	$\begin{array}{r} 11 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -9 \\ \hline \end{array}$
8.	$\begin{array}{r} 10 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -4 \\ \hline \end{array}$
9.	$\begin{array}{r} 17 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$
10.	$\begin{array}{r} 13 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -7 \\ \hline \end{array}$

Perfect score: 80 My score: _____

Multiplication Facts (Form A)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 9 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 6 \\ \hline \end{array}$
2.	$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$
3.	$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 0 \\ \hline \end{array}$
4.	$\begin{array}{r} 6 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 6 \\ \hline \end{array}$
5.	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 1 \\ \hline \end{array}$
6.	$\begin{array}{r} 8 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$
7.	$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 1 \\ \hline \end{array}$
8.	$\begin{array}{r} 6 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 0 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 9 \\ \hline \end{array}$
9.	$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$
10.	$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$

Perfect score: 80 My score: _____

NAME _____

Multiplication Facts (Form B)

[illegible]

Perfect score: 80 My score: _____

Division Facts (Form A)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$2 \overline{) 6}$	$9 \overline{) 18}$	$3 \overline{) 15}$	$6 \overline{) 18}$	$1 \overline{) 3}$	$4 \overline{) 12}$	$5 \overline{) 45}$
2.	$5 \overline{) 35}$	$4 \overline{) 8}$	$7 \overline{) 0}$	$1 \overline{) 7}$	$4 \overline{) 36}$	$9 \overline{) 27}$	$8 \overline{) 16}$
3.	$2 \overline{) 8}$	$6 \overline{) 24}$	$9 \overline{) 36}$	$3 \overline{) 18}$	$4 \overline{) 16}$	$7 \overline{) 7}$	$3 \overline{) 12}$
4.	$8 \overline{) 0}$	$9 \overline{) 9}$	$2 \overline{) 10}$	$5 \overline{) 40}$	$2 \overline{) 4}$	$8 \overline{) 24}$	$6 \overline{) 54}$
5.	$2 \overline{) 2}$	$6 \overline{) 0}$	$4 \overline{) 32}$	$3 \overline{) 21}$	$9 \overline{) 45}$	$3 \overline{) 9}$	$7 \overline{) 14}$
6.	$7 \overline{) 63}$	$1 \overline{) 9}$	$9 \overline{) 0}$	$8 \overline{) 32}$	$6 \overline{) 48}$	$5 \overline{) 0}$	$2 \overline{) 14}$
7.	$5 \overline{) 30}$	$4 \overline{) 28}$	$7 \overline{) 56}$	$2 \overline{) 12}$	$8 \overline{) 72}$	$1 \overline{) 5}$	$9 \overline{) 54}$
8.	$3 \overline{) 0}$	$6 \overline{) 42}$	$3 \overline{) 24}$	$7 \overline{) 21}$	$4 \overline{) 4}$	$6 \overline{) 12}$	$2 \overline{) 0}$
9.	$7 \overline{) 28}$	$8 \overline{) 40}$	$5 \overline{) 25}$	$7 \overline{) 49}$	$5 \overline{) 5}$	$9 \overline{) 63}$	$8 \overline{) 64}$
10.	$4 \overline{) 20}$	$6 \overline{) 6}$	$4 \overline{) 0}$	$6 \overline{) 36}$	$2 \overline{) 16}$	$5 \overline{) 10}$	$3 \overline{) 3}$
11.	$1 \overline{) 8}$	$5 \overline{) 20}$	$4 \overline{) 24}$	$9 \overline{) 72}$	$8 \overline{) 56}$	$7 \overline{) 42}$	$3 \overline{) 27}$
12.	$8 \overline{) 48}$	$9 \overline{) 81}$	$7 \overline{) 35}$	$3 \overline{) 6}$	$5 \overline{) 15}$	$2 \overline{) 18}$	$6 \overline{) 30}$

Perfect score: 84 My score: _____

NAME _____

Division Facts (Form B)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$3 \overline{) 18}$	$5 \overline{) 35}$	$4 \overline{) 4}$	$1 \overline{) 9}$	$7 \overline{) 0}$	$2 \overline{) 18}$	$4 \overline{) 36}$
2.	$6 \overline{) 54}$	$7 \overline{) 14}$	$2 \overline{) 16}$	$5 \overline{) 40}$	$4 \overline{) 8}$	$6 \overline{) 42}$	$7 \overline{) 63}$
3.	$1 \overline{) 0}$	$8 \overline{) 24}$	$4 \overline{) 32}$	$7 \overline{) 21}$	$1 \overline{) 6}$	$5 \overline{) 45}$	$3 \overline{) 0}$
4.	$5 \overline{) 30}$	$2 \overline{) 14}$	$6 \overline{) 48}$	$3 \overline{) 21}$	$7 \overline{) 28}$	$8 \overline{) 16}$	$9 \overline{) 9}$
5.	$3 \overline{) 15}$	$9 \overline{) 0}$	$1 \overline{) 5}$	$9 \overline{) 18}$	$3 \overline{) 6}$	$6 \overline{) 12}$	$8 \overline{) 40}$
6.	$7 \overline{) 35}$	$1 \overline{) 4}$	$8 \overline{) 48}$	$4 \overline{) 12}$	$8 \overline{) 8}$	$3 \overline{) 24}$	$5 \overline{) 0}$
7.	$2 \overline{) 12}$	$9 \overline{) 45}$	$4 \overline{) 0}$	$4 \overline{) 28}$	$1 \overline{) 3}$	$9 \overline{) 27}$	$6 \overline{) 36}$
8.	$4 \overline{) 24}$	$5 \overline{) 25}$	$2 \overline{) 10}$	$9 \overline{) 72}$	$5 \overline{) 10}$	$1 \overline{) 2}$	$8 \overline{) 56}$
9.	$6 \overline{) 24}$	$8 \overline{) 0}$	$7 \overline{) 49}$	$3 \overline{) 9}$	$4 \overline{) 20}$	$7 \overline{) 56}$	$2 \overline{) 0}$
10.	$3 \overline{) 12}$	$9 \overline{) 81}$	$1 \overline{) 1}$	$6 \overline{) 18}$	$5 \overline{) 15}$	$2 \overline{) 4}$	$9 \overline{) 54}$
11.	$6 \overline{) 6}$	$5 \overline{) 20}$	$6 \overline{) 30}$	$9 \overline{) 36}$	$2 \overline{) 8}$	$8 \overline{) 64}$	$3 \overline{) 27}$
12.	$8 \overline{) 32}$	$2 \overline{) 6}$	$8 \overline{) 72}$	$4 \overline{) 16}$	$6 \overline{) 0}$	$9 \overline{) 63}$	$7 \overline{) 42}$

Perfect score: 84 My score: _____

Assignment Record Sheet

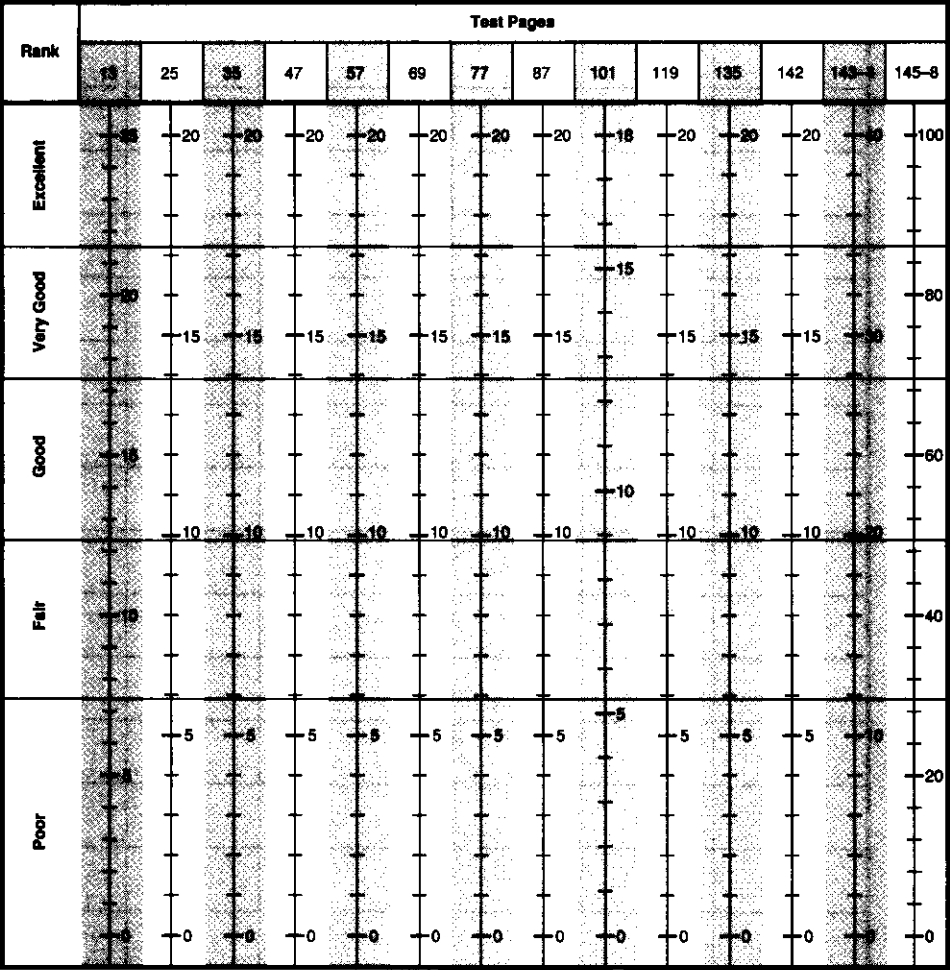
NAME _____

[illegible][illegible][illegible]

NAME _____

SPECTRUM MATHEMATICS

Record of Test Scores



- To record the score you receive on a TEST:
- (1) Find the vertical scale below the page number of that TEST,
 - (2) on that vertical scale, draw a ● at the mark which represents your score.

For example, if your score for the TEST on page 13 is “My score: 15,” draw a ● at the 15-mark on the first vertical scale. A score of 15 would show that your rank is “Good.” You can check your progress from one test to the next by connecting the dots with a line segment.

PRE-TEST—Addition and Subtraction

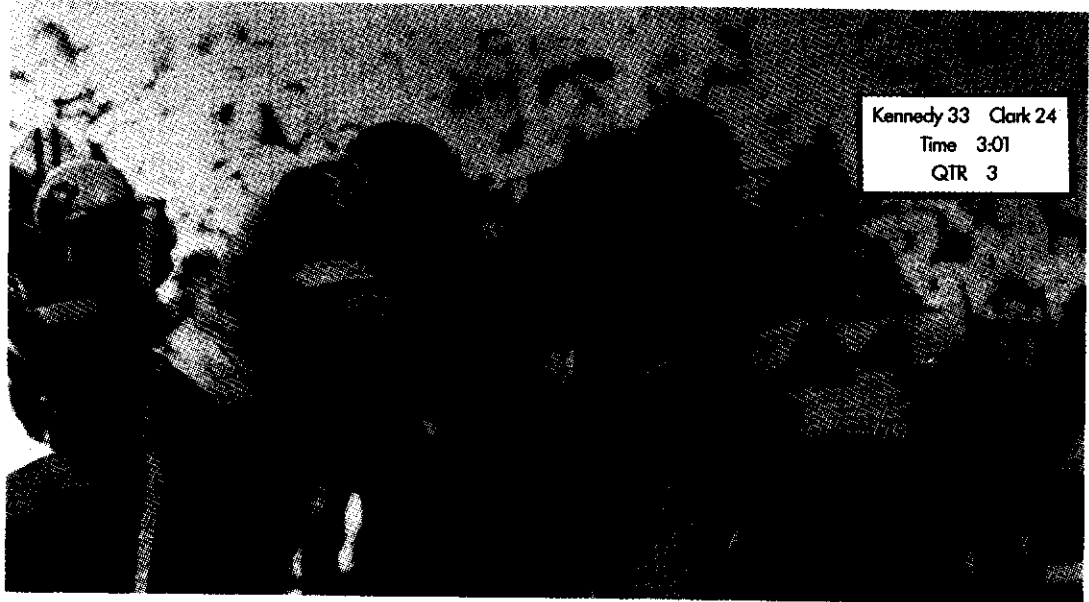


Add or subtract.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} 42 \\ +26 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ +48 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ +95 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ +48 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ +39 \\ \hline \end{array}$
2.	$\begin{array}{r} 84 \\ -23 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ -26 \\ \hline \end{array}$	$\begin{array}{r} 173 \\ -92 \\ \hline \end{array}$	$\begin{array}{r} 165 \\ -87 \\ \hline \end{array}$	$\begin{array}{r} 108 \\ -39 \\ \hline \end{array}$
3.	$\begin{array}{r} 421 \\ +357 \\ \hline \end{array}$	$\begin{array}{r} 832 \\ +149 \\ \hline \end{array}$	$\begin{array}{r} 267 \\ +138 \\ \hline \end{array}$	$\begin{array}{r} 521 \\ +783 \\ \hline \end{array}$	$\begin{array}{r} 956 \\ +287 \\ \hline \end{array}$
4.	$\begin{array}{r} 854 \\ -321 \\ \hline \end{array}$	$\begin{array}{r} 783 \\ -625 \\ \hline \end{array}$	$\begin{array}{r} 921 \\ -570 \\ \hline \end{array}$	$\begin{array}{r} 1436 \\ -349 \\ \hline \end{array}$	$\begin{array}{r} 1793 \\ -875 \\ \hline \end{array}$
5.	$\begin{array}{r} 4235 \\ +3796 \\ \hline \end{array}$	$\begin{array}{r} 6518 \\ +4739 \\ \hline \end{array}$	$\begin{array}{r} 51672 \\ +4318 \\ \hline \end{array}$	$\begin{array}{r} 52196 \\ +38417 \\ \hline \end{array}$	$\begin{array}{r} 25186 \\ +35821 \\ \hline \end{array}$
6.	$\begin{array}{r} 7659 \\ -3847 \\ \hline \end{array}$	$\begin{array}{r} 8250 \\ -6374 \\ \hline \end{array}$	$\begin{array}{r} 52169 \\ -3057 \\ \hline \end{array}$	$\begin{array}{r} 42196 \\ -38427 \\ \hline \end{array}$	$\begin{array}{r} 52105 \\ -38156 \\ \hline \end{array}$
7.	$\begin{array}{r} 42 \\ 57 \\ +38 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 27 \\ +86 \\ \hline \end{array}$	$\begin{array}{r} 375 \\ 246 \\ +381 \\ \hline \end{array}$	$\begin{array}{r} 6023 \\ 4034 \\ +7012 \\ \hline \end{array}$	$\begin{array}{r} 73152 \\ 43081 \\ +52165 \\ \hline \end{array}$
8.	$\begin{array}{r} 54 \\ 27 \\ 38 \\ +46 \\ \hline \end{array}$	$\begin{array}{r} 731 \\ 208 \\ 319 \\ +426 \\ \hline \end{array}$	$\begin{array}{r} 500 \\ 364 \\ 217 \\ 390 \\ +324 \\ \hline \end{array}$	$\begin{array}{r} 8216 \\ 4315 \\ 2173 \\ 4081 \\ +5216 \\ \hline \end{array}$	$\begin{array}{r} 70812 \\ 32181 \\ 31218 \\ 61408 \\ +30802 \\ \hline \end{array}$

Perfect score: 40 My score: _____

Problem Solving Pre-Test



Solve each problem.

1. How many points have been scored by both teams?

Kennedy has scored _____ points.

Clark has scored _____ points.

Both teams have scored _____ points.

2. Which team is ahead? By how many points are they ahead?

_____ is ahead.

They are ahead by _____ points.

3. During the rest of the game Kennedy scored 10 more points and Clark scored 12 more points. Which team won the game? By how many points did they win?

The final score for Kennedy was _____.

The final score for Clark was _____.

_____ won the game.

They won by _____ points.

1.	2.
3.	

Lesson 1 Addition

Add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$
2.	$\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +7 \\ \hline \end{array}$
3.	$\begin{array}{r} 7 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$
4.	$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$
5.	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +9 \\ \hline \end{array}$
6.	$\begin{array}{r} 5 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +8 \\ \hline \end{array}$
7.	$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +0 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +0 \\ \hline \end{array}$
8.	$\begin{array}{r} 3 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$
9.	$\begin{array}{r} 2 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +6 \\ \hline \end{array}$

Perfect score: 72 My score: _____

NAME _____

Lesson 2 Subtraction

Subtract.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -9 \\ \hline \end{array}$
2.	$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$
3.	$\begin{array}{r} 11 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -9 \\ \hline \end{array}$
4.	$\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$
5.	$\begin{array}{r} 8 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -5 \\ \hline \end{array}$
6.	$\begin{array}{r} 8 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$
7.	$\begin{array}{r} 9 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$
8.	$\begin{array}{r} 14 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$
9.	$\begin{array}{r} 12 \\ -7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$

Perfect score: 72 My score: _____

Lesson 3 Addition and Subtraction

	Add the ones. Rename.	Add the tens.		Rename 146 as "1 hundred, 3 tens, and 16 ones." Then subtract the ones.	Rename 1 hundred and 3 tens as "13 tens." Then subtract the tens.
$\begin{array}{r} 58 \\ +89 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array}$ 	$\begin{array}{r} 58 \\ +89 \\ \hline 147 \end{array}$	$\begin{array}{r} 146 \\ -87 \\ \hline \end{array}$	$\begin{array}{r} 1\cancel{4}^3\cancel{6}^{16} \\ -87 \\ \hline 9 \end{array}$	$\begin{array}{r} 1\cancel{3}^{13}\cancel{0}^{16} \\ -87 \\ \hline 59 \end{array}$

Add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 23 \\ +54 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ +25 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ +16 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ +54 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ +31 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ +42 \\ \hline \end{array}$
2.	$\begin{array}{r} 27 \\ +35 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ +28 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ +26 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ +49 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ +28 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ +26 \\ \hline \end{array}$
3.	$\begin{array}{r} 47 \\ +78 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ +86 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ +79 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ +84 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ +96 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ +47 \\ \hline \end{array}$
4.	$\begin{array}{r} 36 \\ +27 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ +23 \\ \hline \end{array}$	$\begin{array}{r} 77 \\ +77 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ +42 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ +24 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ +75 \\ \hline \end{array}$

Subtract.

5.	$\begin{array}{r} 76 \\ -24 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ -22 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ -63 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ -24 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ -31 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ -30 \\ \hline \end{array}$
6.	$\begin{array}{r} 95 \\ -26 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ -19 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ -27 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ -48 \\ \hline \end{array}$	$\begin{array}{r} 91 \\ -73 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ -27 \\ \hline \end{array}$
7.	$\begin{array}{r} 126 \\ -37 \\ \hline \end{array}$	$\begin{array}{r} 143 \\ -95 \\ \hline \end{array}$	$\begin{array}{r} 156 \\ -88 \\ \hline \end{array}$	$\begin{array}{r} 172 \\ -76 \\ \hline \end{array}$	$\begin{array}{r} 168 \\ -99 \\ \hline \end{array}$	$\begin{array}{r} 153 \\ -85 \\ \hline \end{array}$

Perfect score: 42 My score: _____

Problem Solving

Solve each problem.

1. Sarah's father worked 36 hours one week and 47 hours the next week. How many hours did he work during these two weeks?

He worked _____ hours the first week.

He worked _____ hours the second week.

During these two weeks,
he worked a total of _____ hours.

2. Seventy-six people live in Harold's apartment building. In Mike's apartment building, there are 85 people. How many more people live in Mike's building than in Harold's building?

_____ people live in Mike's building.

_____ people live in Harold's building.

_____ more people live in Mike's building.

3. In problem 2, how many people live in both Harold's and Mike's apartment buildings?

_____ people live in both buildings.

4. There are 103 pages in Vera's new book. She has read 35 pages. How many pages does she have left to read?

There are _____ pages in the book.

She has read _____ pages.

She has _____ pages left to read.

5. Paula lives 53 kilometers from Darton. Ann lives 85 kilometers from Darton. How many kilometers closer to Darton does Paula live than Ann?

Paula lives _____ kilometers closer.

1.

2.

3.

4.

5.

Perfect score: 11 My score: _____

Lesson 4 Addition and Subtraction

Add from right to left.

$$\begin{array}{r} \overset{1}{7}54 \\ +587 \\ \hline 1 \end{array}$$

$$\begin{array}{r} \overset{1}{7}\overset{1}{5}4 \\ +587 \\ \hline 41 \end{array}$$

$$\begin{array}{r} \overset{1}{7}\overset{1}{5}4 \\ +587 \\ \hline 1341 \end{array}$$

Subtract from right to left.

$$\begin{array}{r} \overset{3}{1}3\overset{1}{4}1 \\ -587 \\ \hline 4 \end{array}$$

$$\begin{array}{r} \overset{13}{2}\overset{11}{8}1 \\ -587 \\ \hline 54 \end{array}$$

$$\begin{array}{r} \overset{12}{2}\overset{13}{8}\overset{11}{1} \\ -587 \\ \hline 754 \end{array}$$

Add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 314 \\ +482 \\ \hline \end{array}$	$\begin{array}{r} 703 \\ +192 \\ \hline \end{array}$	$\begin{array}{r} 542 \\ +318 \\ \hline \end{array}$	$\begin{array}{r} 265 \\ +429 \\ \hline \end{array}$	$\begin{array}{r} 553 \\ +274 \\ \hline \end{array}$	$\begin{array}{r} 629 \\ +280 \\ \hline \end{array}$

2.	$\begin{array}{r} 483 \\ +702 \\ \hline \end{array}$	$\begin{array}{r} 546 \\ +931 \\ \hline \end{array}$	$\begin{array}{r} 736 \\ +279 \\ \hline \end{array}$	$\begin{array}{r} 653 \\ +199 \\ \hline \end{array}$	$\begin{array}{r} 706 \\ +539 \\ \hline \end{array}$	$\begin{array}{r} 582 \\ +609 \\ \hline \end{array}$
----	--	--	--	--	--	--

3.	$\begin{array}{r} 813 \\ +792 \\ \hline \end{array}$	$\begin{array}{r} 763 \\ +762 \\ \hline \end{array}$	$\begin{array}{r} 423 \\ +798 \\ \hline \end{array}$	$\begin{array}{r} 358 \\ +759 \\ \hline \end{array}$	$\begin{array}{r} 816 \\ +395 \\ \hline \end{array}$	$\begin{array}{r} 926 \\ +178 \\ \hline \end{array}$
----	--	--	--	--	--	--

Subtract.

4.	$\begin{array}{r} 784 \\ -362 \\ \hline \end{array}$	$\begin{array}{r} 927 \\ -405 \\ \hline \end{array}$	$\begin{array}{r} 542 \\ -314 \\ \hline \end{array}$	$\begin{array}{r} 765 \\ -238 \\ \hline \end{array}$	$\begin{array}{r} 926 \\ -341 \\ \hline \end{array}$	$\begin{array}{r} 563 \\ -281 \\ \hline \end{array}$
----	--	--	--	--	--	--

5.	$\begin{array}{r} 1732 \\ -812 \\ \hline \end{array}$	$\begin{array}{r} 1574 \\ -923 \\ \hline \end{array}$	$\begin{array}{r} 1764 \\ -925 \\ \hline \end{array}$	$\begin{array}{r} 1345 \\ -629 \\ \hline \end{array}$	$\begin{array}{r} 1542 \\ -286 \\ \hline \end{array}$	$\begin{array}{r} 1637 \\ -439 \\ \hline \end{array}$
----	---	---	---	---	---	---

6.	$\begin{array}{r} 1563 \\ -678 \\ \hline \end{array}$	$\begin{array}{r} 1322 \\ -733 \\ \hline \end{array}$	$\begin{array}{r} 1580 \\ -687 \\ \hline \end{array}$	$\begin{array}{r} 1629 \\ -243 \\ \hline \end{array}$	$\begin{array}{r} 1435 \\ -162 \\ \hline \end{array}$	$\begin{array}{r} 1748 \\ -358 \\ \hline \end{array}$
----	---	---	---	---	---	---

7.	$\begin{array}{r} 1984 \\ -362 \\ \hline \end{array}$	$\begin{array}{r} 1864 \\ -372 \\ \hline \end{array}$	$\begin{array}{r} 1250 \\ -741 \\ \hline \end{array}$	$\begin{array}{r} 1608 \\ -413 \\ \hline \end{array}$	$\begin{array}{r} 1500 \\ -263 \\ \hline \end{array}$	$\begin{array}{r} 1542 \\ -245 \\ \hline \end{array}$
----	---	---	---	---	---	---

Perfect score: 42 My score: _____

Problem Solving

Answer each question.

1. The mileage reading on Mr. Lee's car is 142. On Mr. Cook's, it is 319. How many more miles does Mr. Cook have on his car than Mr. Lee?

Are you to add
or subtract? _____

How many more miles does
Mr. Cook have on his car than Mr. Lee? _____

2. Myrtle and Doris collect trading stamps. Myrtle has 423 trading stamps and Doris has 519. How many stamps do both girls have?

Are you to add
or subtract? _____

How many stamps
do both girls have? _____

3. Helen's family drove 975 miles on their vacation last year and 776 miles this year. How many miles did they travel during these two vacations?

Are you to add
or subtract? _____

How many miles did they travel
during these two vacations? _____

4. In problem 3, how many more miles did they travel during the first year than the last?

Are you to add
or subtract? _____

How many more miles did they
travel during the first year than the last? _____

5. Tricia needs 293 more points to win a prize. It takes 1,500 points to win a prize. How many points does Tricia have now?

Are you to add
or subtract? _____

How many points does she have now? _____

1.

2.

3.

4.

5.

Lesson 5 Addition and Subtraction

Add.
$$\begin{array}{r} 21345 \\ + 9462 \\ \hline 30807 \end{array}$$

Check. $\left\{ \begin{array}{r} - 9462 \\ \hline 21345 \end{array} \right.$ These should
 be the same.

Subtract.
$$\begin{array}{r} 30807 \\ - 9462 \\ \hline 21345 \end{array}$$

Check. $\left\{ \begin{array}{r} + 9462 \\ \hline 30807 \end{array} \right.$ These should
 be the same.

Add. Check each answer.

a

1.
$$\begin{array}{r} 30821 \\ + 4163 \\ \hline \end{array}$$

b

$$\begin{array}{r} 52964 \\ + 3175 \\ \hline \end{array}$$

c

$$\begin{array}{r} 76487 \\ + 5243 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 42563 \\ + 15786 \\ \hline \end{array}$$

$$\begin{array}{r} 15243 \\ + 27561 \\ \hline \end{array}$$

$$\begin{array}{r} 36724 \\ + 81409 \\ \hline \end{array}$$

Subtract. Check each answer.

3.
$$\begin{array}{r} 72431 \\ - 5316 \\ \hline \end{array}$$

$$\begin{array}{r} 92640 \\ - 6741 \\ \hline \end{array}$$

$$\begin{array}{r} 61430 \\ - 6429 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 54061 \\ - 6835 \\ \hline \end{array}$$

$$\begin{array}{r} 72413 \\ - 6785 \\ \hline \end{array}$$

$$\begin{array}{r} 84205 \\ - 5116 \\ \hline \end{array}$$

Perfect score: 12 My score: _____

Problem Solving

Solve each problem. Check each answer.

1. The space flight is expected to last 11,720 minutes. They are now 7,342 minutes into the flight. How many minutes remain?

_____ minutes remain in the flight.

2. In one year Mr. Ching drove the company car 13,428 kilometers and his personal car 8,489 kilometers. How many kilometers did he drive both cars?

He drove _____ kilometers.

3. In problem 2, how many fewer kilometers did he drive his personal car than the company car?

He drove his personal car _____ fewer kilometers.

4. The factory where Mrs. Whitmal works produced 3,173 fewer parts this month than last. The factory produced 42,916 parts this month. How many parts did it produce last month?

The factory produced _____ parts last month.

5. Suppose the factory in problem 4 produced 3,173 more parts this month than last. How many parts would it have produced last month?

_____ parts would have been produced.

6. There are 86,400 seconds in a day. How many seconds are there in two days?

There are _____ seconds in two days.

7. During one month Jo Anne spends 14,400 minutes sleeping and 5,800 minutes eating. How much time does she spend either eating or sleeping?

She spends _____ minutes either eating or sleeping.

1.

2.

3.

4.

5.

6.

7.

Lesson 6 Addition

3675
1406
3759
+6134

Add the ones.

5
6
9
+4
2 4

3675
1406
3759
+6134
4

Follow the same pattern to add the tens, the hundreds, and so on.

1 1 2
3675
1406
3759
+6134
14974

Add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	453 216 <u>+320</u>	231 425 <u>+317</u>	242 375 <u>+161</u>	726 630 <u>+712</u>	542 416 <u>+537</u>
2.	6314 2145 <u>+7634</u>	2165 3420 <u>+7015</u>	8093 1246 <u>+543</u>	72193 83470 <u>+21659</u>	72165 45230 <u>+3216</u>
3.	325 463 179 <u>+258</u>	726 314 540 <u>+829</u>	7316 1425 7834 <u>+2401</u>	8216 7343 81692 <u>+40830</u>	92163 48517 73214 <u>+82119</u>
4.	730 460 273 892 <u>+453</u>	3829 1364 1274 429 <u>+670</u>	8213 4106 2300 4819 <u>+2745</u>	36000 72450 83192 62451 <u>+31924</u>	42165 30708 29115 40082 <u>+31621</u>
5.	542 365 421 300 460 <u>+523</u>	1628 329 1754 321 608 <u>+2911</u>	4216 53008 42134 2165 3008 <u>+4000</u>	52163 4218 316 5421 62190 <u>+420</u>	316 2143 126 52140 1230 <u>+680</u>

Perfect score: 25 My score: _____

Problem Solving

Solve each problem.

1. During the summer reading program, Faye read 752 pages. Barbara read 436 pages. Gilbert read 521 pages. How many pages did these students read altogether?

They read _____ pages altogether.

2. During September Joe Shedare traveled the following numbers of miles: 421; 308; 240; and 571. What was the total number of miles he traveled?

He traveled a total of _____ miles.

3. Four astronauts have logged the following times in actual space travel: 4,216 minutes, 14,628 minutes, 3,153 minutes, and 22,117 minutes. How many minutes have all four astronauts logged in actual space travel?

All four have logged _____ minutes in space.

4. The number of parts shipped to 6 cities was as follows: 317; 2,410; 32,415; 4,068; 321; and 5,218. How many parts were shipped in all?

_____ parts were shipped.

5. A recent census gave the following populations: Adel, 4,321; Albany, 55,890; Alma, 3,515; Alto Park, 2,526; Americus, 13,472; and Ashburn, 3,291. What is the total population of these places?

The total population is _____.

6. In an earlier census, the populations of the towns listed in problem 5 were 2,776; 31,155; 2,588; 1,195; 11,389; and 2,918 respectively. What was the total population then?

Then the total population was _____.

7. In problem 5, what is the total population of Adel, Albany, and Alto Park?

The total population is _____.

1

2.

3.

4.

5.

6.

7.

Perfect score: 7 My score: _____

CHAPTER 1 TEST

Add or subtract.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} 46 \\ +32 \\ \hline \end{array}$	$\begin{array}{r} 423 \\ +268 \\ \hline \end{array}$	$\begin{array}{r} 1829 \\ +3573 \\ \hline \end{array}$	$\begin{array}{r} 7521 \\ +3609 \\ \hline \end{array}$	$\begin{array}{r} 52163 \\ +72845 \\ \hline \end{array}$
2.	$\begin{array}{r} 85 \\ -32 \\ \hline \end{array}$	$\begin{array}{r} 564 \\ -382 \\ \hline \end{array}$	$\begin{array}{r} 1936 \\ -479 \\ \hline \end{array}$	$\begin{array}{r} 18312 \\ -9264 \\ \hline \end{array}$	$\begin{array}{r} 10306 \\ -2568 \\ \hline \end{array}$
3.	$\begin{array}{r} 32 \\ 26 \\ +13 \\ \hline \end{array}$	$\begin{array}{r} 724 \\ 380 \\ +465 \\ \hline \end{array}$	$\begin{array}{r} 295 \\ 327 \\ 168 \\ +269 \\ \hline \end{array}$	$\begin{array}{r} 5534 \\ 1468 \\ 3137 \\ +2950 \\ \hline \end{array}$	$\begin{array}{r} 42163 \\ 30820 \\ 21911 \\ +60422 \\ \hline \end{array}$
4.	$\begin{array}{r} 7832 \\ -1467 \\ \hline \end{array}$	$\begin{array}{r} 8309 \\ -2654 \\ \hline \end{array}$	$\begin{array}{r} 13182 \\ -4296 \\ \hline \end{array}$	$\begin{array}{r} 171234 \\ -82169 \\ \hline \end{array}$	$\begin{array}{r} 102085 \\ -36526 \\ \hline \end{array}$

Solve each problem.

5. The following points were earned in a ticket-selling contest: Maxine, 2,320; Trudy, 1,564; Eileen, 907; Lyn, 852; Marty, 775. What was the total number of points earned by Maxine and Eileen?

Maxine earned _____ points.

Eileen earned _____ points.

They earned a total of _____ points.

6. In problem 5, what was the total number of points earned by all five girls?

They earned a total of _____ points.

7. In problem 5, how many more points did Trudy earn than Marty?

Trudy earned _____ more points.

5.

6.

7.

Perfect score: 25 My score: _____

PRE-TEST—Multiplication

NAME _____

Chapter 2

Multiply.

- | | | | | |
|----|--|--|---|---|
| 1. | $\begin{array}{r} a \\ 24 \\ \times 2 \\ \hline \end{array}$ | $\begin{array}{r} b \\ 35 \\ \times 2 \\ \hline \end{array}$ | $\begin{array}{r} c \\ 154 \\ \times 6 \\ \hline \end{array}$ | $\begin{array}{r} d \\ 678 \\ \times 9 \\ \hline \end{array}$ |
| 2. | $\begin{array}{r} 31 \\ \times 23 \\ \hline \end{array}$ | $\begin{array}{r} 82 \\ \times 18 \\ \hline \end{array}$ | $\begin{array}{r} 45 \\ \times 51 \\ \hline \end{array}$ | $\begin{array}{r} 87 \\ \times 39 \\ \hline \end{array}$ |
| 3. | $\begin{array}{r} 143 \\ \times 22 \\ \hline \end{array}$ | $\begin{array}{r} 734 \\ \times 19 \\ \hline \end{array}$ | $\begin{array}{r} 253 \\ \times 62 \\ \hline \end{array}$ | $\begin{array}{r} 708 \\ \times 36 \\ \hline \end{array}$ |
| 4. | $\begin{array}{r} 321 \\ \times 123 \\ \hline \end{array}$ | $\begin{array}{r} 432 \\ \times 621 \\ \hline \end{array}$ | $\begin{array}{r} 507 \\ \times 143 \\ \hline \end{array}$ | $\begin{array}{r} 821 \\ \times 105 \\ \hline \end{array}$ |
| 5. | $\begin{array}{r} 3126 \\ \times 422 \\ \hline \end{array}$ | $\begin{array}{r} 4032 \\ \times 145 \\ \hline \end{array}$ | $\begin{array}{r} 3124 \\ \times 712 \\ \hline \end{array}$ | $\begin{array}{r} 8197 \\ \times 325 \\ \hline \end{array}$ |

Perfect score: 20 My score: _____

Problem Solving

Solve each problem.

1. There are 6 rows of desks in the office. Each row has 8 desks. How many desks are in the office?

There are _____ rows of desks.

There are _____ desks in each row.

There are _____ desks in all.

2. There are 9 rows of trees. There are 7 trees in each row. How many trees are there in all?

There are _____ rows of trees.

There are _____ trees in each row.

There are _____ trees in all.

3. The people at the park were separated into teams of 8 people each. Nine teams were formed. How many people were in the park?

Each team has _____ people.

There were _____ teams formed.

There were _____ people in the park.

4. There were 6 people in each car. There were 7 cars. How many people were there in all?

There were _____ people in each car.

There were _____ cars.

There were _____ people in all.

5. How many cents would you need to buy eight 8-cent pencils?

You would need _____ cents.

6. There are 5 oranges in each sack. How many oranges would there be in 9 sacks?

There would be _____ oranges in 9 sacks.

1.

2.

3.

4.

5.

6.

Perfect score: 14 My score: _____

Lesson 2 Multiplication

Multiply
3 ones by 5.

$$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

Multiply 7 tens by 5.
Add the tens.

$$\begin{array}{r} 7 \text{ tens} \\ \times 5 \\ \hline 35 \text{ tens} \\ + 1 \text{ ten} \\ \hline 36 \text{ tens} \end{array}$$

$$\begin{array}{r} 327 \\ \times 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 327 \\ \times 4 \\ \hline 08 \end{array}$$

$$\begin{array}{r} 327 \\ \times 4 \\ \hline 1308 \end{array}$$

Multiply.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $\begin{array}{r} 32 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 132 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 213 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 421 \\ \times 2 \\ \hline \end{array}$
2. $\begin{array}{r} 16 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 123 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 127 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 215 \\ \times 4 \\ \hline \end{array}$
3. $\begin{array}{r} 73 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 81 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 352 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 172 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 263 \\ \times 3 \\ \hline \end{array}$
4. $\begin{array}{r} 57 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 256 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 385 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 177 \\ \times 5 \\ \hline \end{array}$
5. $\begin{array}{r} 28 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 426 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 358 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 234 \\ \times 5 \\ \hline \end{array}$
6. $\begin{array}{r} 57 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 526 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 409 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 730 \\ \times 7 \\ \hline \end{array}$
7. $\begin{array}{r} 72 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 81 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 629 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 801 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 658 \\ \times 9 \\ \hline \end{array}$

Perfect score: 42 My score: _____

Problem Solving

Solve each problem.

1. Each club member works 3 hours each month. There are 32 members. What is the total number of hours worked each month by all the club members?

There are _____ club members.

Each member works _____ hours.

The club members work _____ hours in all.

2. Mrs. Robins drives 19 miles every working day. How many miles does she drive in a five-day work-week?

She drives _____ miles every working day.

She works _____ days a week.

She drives _____ miles in a five-day workweek.

3. It takes 54 minutes to make one gizmo. How long will it take to make 3 gizmos?

It takes _____ minutes to make one gizmo.

There are _____ gizmos.

It takes _____ minutes to make 3 gizmos.

4. Each box weighs 121 kilograms. There are 4 boxes. What is the total weight of the 4 boxes?

Each box weighs _____ kilograms.

There are _____ boxes.

The total weight of the 4 boxes is _____ kilograms.

5. There are 168 hours in a week. How many hours are there in 6 weeks?

There are _____ hours in 6 weeks.

6. There were 708 employees at work today. Each employee worked 8 hours. How many hours did these employees work?

_____ hours were worked.

1.

2.

3.

4.

5.

6.

Lesson 3 Multiplication

$\begin{array}{r} 41 \\ \times 2 \\ \hline 82 \end{array}$	$\begin{array}{r} 41 \\ \times 20 \\ \hline 820 \end{array}$	$\begin{array}{r} 56 \\ \times 3 \\ \hline 168 \end{array}$	$\begin{array}{r} 56 \\ \times 30 \\ \hline 1680 \end{array}$
--	--	---	---

If $2 \times 41 = 82$, then $20 \times 41 =$ _____.

If $3 \times 56 = 168$, then $30 \times 56 =$ _____.

If $4 \times 27 = 108$, then $40 \times 27 =$ _____.

Multiply 56 by 1.	Multiply 56 by 30.	
$\begin{array}{r} 56 \\ \times 31 \\ \hline 56 \end{array}$	$\begin{array}{r} 56 \\ \times 31 \\ \hline 56 \\ 1680 \end{array}$	$\begin{array}{r} 56 \\ \times 31 \\ \hline 56 \\ 1680 \\ \hline 1736 \end{array}$
		} Add.

Multiply.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 23 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 30 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ \times 40 \\ \hline \end{array}$
2.	$\begin{array}{r} 37 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ \times 40 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ \times 60 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ \times 90 \\ \hline \end{array}$
3.	$\begin{array}{r} 42 \\ \times 30 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ \times 40 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ \times 70 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ \times 60 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 50 \\ \hline \end{array}$

Multiply.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
4.	$\begin{array}{r} 31 \\ \times 23 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ \times 33 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ \times 12 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ \times 35 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 24 \\ \hline \end{array}$
5.	$\begin{array}{r} 54 \\ \times 26 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ \times 41 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ \times 16 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ \times 73 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ \times 28 \\ \hline \end{array}$

Perfect score: 28 My score: _____

Problem Solving

Solve each problem.

1. There are 60 minutes in one hour. How many minutes are there in 24 hours?

There are _____ minutes in 24 hours.

2. Forty-eight toy boats are packed in each box. How many boats are there in 16 boxes?

There are _____ boats in 16 boxes.

3. Seventy-three new cars can be assembled in one hour. At that rate, how many cars could be assembled in 51 hours?

_____ cars could be assembled in 51 hours.

4. A truck is hauling 36 bags of cement. Each bag weighs 94 pounds. How many pounds of cement are being hauled?

_____ pounds of cement are being hauled.

5. To square a number means to multiply the number by itself. What is the square of 68?

The square of 68 is _____.

6. Seventy-five books are packed in each box. How many books are there in 85 boxes?

There are _____ books in 85 boxes.

7. Every classroom in Jane's school has at least 29 desks. There are 38 classrooms in all. What is the least number of desks in the school?

There are at least _____ desks.

8. Some pupils came to the museum on 38 buses. There were 58 pupils on each bus. How many pupils came to the museum by bus?

_____ pupils came by bus.

1.	2.
3.	4.
5.	6.
7.	8.

Lesson 4 Multiplication

NAME _____

$$\begin{array}{r} 351 \\ \times 27 \\ \hline \end{array}$$

Multiply
351 by 7.

$$\begin{array}{r} 351 \\ \times 27 \\ \hline 2457 \end{array}$$

Multiply
351 by 20.

$$\begin{array}{r} 351 \\ \times 27 \\ \hline 2457 \\ 7020 \end{array}$$

$$\begin{array}{r} 351 \\ \times 27 \\ \hline 2457 \\ 7020 \\ \hline 9477 \end{array} \left. \vphantom{\begin{array}{r} 351 \\ \times 27 \\ \hline 2457 \\ 7020 \\ \hline 9477 \end{array}} \right\} \text{Add.}$$

Multiply.

a
1. $\begin{array}{r} 42 \\ \times 13 \\ \hline \end{array}$

b
 $\begin{array}{r} 23 \\ \times 32 \\ \hline \end{array}$

c
 $\begin{array}{r} 54 \\ \times 41 \\ \hline \end{array}$

d
 $\begin{array}{r} 37 \\ \times 26 \\ \hline \end{array}$

e
 $\begin{array}{r} 58 \\ \times 19 \\ \hline \end{array}$

2. $\begin{array}{r} 58 \\ \times 72 \\ \hline \end{array}$

$\begin{array}{r} 27 \\ \times 36 \\ \hline \end{array}$

$\begin{array}{r} 40 \\ \times 55 \\ \hline \end{array}$

$\begin{array}{r} 27 \\ \times 27 \\ \hline \end{array}$

$\begin{array}{r} 39 \\ \times 42 \\ \hline \end{array}$

3. $\begin{array}{r} 154 \\ \times 13 \\ \hline \end{array}$

$\begin{array}{r} 231 \\ \times 26 \\ \hline \end{array}$

$\begin{array}{r} 251 \\ \times 41 \\ \hline \end{array}$

$\begin{array}{r} 312 \\ \times 32 \\ \hline \end{array}$

$\begin{array}{r} 415 \\ \times 47 \\ \hline \end{array}$

4. $\begin{array}{r} 365 \\ \times 27 \\ \hline \end{array}$

$\begin{array}{r} 426 \\ \times 13 \\ \hline \end{array}$

$\begin{array}{r} 715 \\ \times 26 \\ \hline \end{array}$

$\begin{array}{r} 302 \\ \times 43 \\ \hline \end{array}$

$\begin{array}{r} 756 \\ \times 29 \\ \hline \end{array}$

Perfect score: 20 My score: _____

Problem Solving

Solve each problem.

1. A machine can produce 98 parts in one hour. How many parts could it produce in 72 hours?

It could produce _____ parts in 72 hours.

2. Each new bus can carry 66 passengers. How many passengers can ride on 85 new buses?

_____ passengers could ride on 85 buses.

3. A gross is twelve dozen or 144. The school ordered 21 gross of pencils. How many pencils were ordered?

The school ordered _____ pencils.

4. How many hours are there in a year (365 days)?

There are _____ hours in a year.

5. Each of 583 people worked a 40-hour week. How many hours of work was this?

It was _____ hours of work.

6. The highway mileage between New York and Chicago is 840 miles. How many miles would a bus travel in making 68 one-way trips between New York and Chicago?

The bus would travel _____ miles.

7. The airline distance between the cities in problem 6 is 713 miles. What is the least number of miles a plane would travel in making 57 one-way trips?

The least number of miles would be _____.

8. The rail mileage between Washington, D. C., and Chicago is 768 miles. How many miles would a train travel in making 52 one-way trips?

It would travel _____ miles.

9. The airline distance between the cities in problem 8 is 597 miles. What is the least number of miles a plane would travel in making 45 one-way trips?

The least number of miles would be _____.

1.	2.
3.	4.
5.	6.
7.	8.
9.	

Perfect score: 9 My score: _____

Lesson 5 Multiplication

$$\begin{array}{r} 3254 \\ \times 2 \\ \hline 6508 \end{array}$$

$$\begin{array}{r} 3254 \\ \times 20 \\ \hline 65080 \end{array}$$

$$\begin{array}{r} 3254 \\ \times 200 \\ \hline 650800 \end{array}$$

If $2 \times 3254 = 6508$, then $20 \times 3254 =$ _____.

If $2 \times 3254 = 6508$, then $200 \times 3254 =$ _____.

$$\begin{array}{r} 3254 \\ \times 213 \\ \hline 9762 \text{ ————— } 3 \times 3254 \\ 32540 \text{ ————— } 10 \times 3254 \\ 650800 \text{ ————— } 200 \times 3254 \\ \hline 693102 \end{array}$$

Add.

Multiply.

a

$$\begin{array}{r} 1. \quad 316 \\ \times 2 \\ \hline \end{array}$$

b

$$\begin{array}{r} 316 \\ \times 200 \\ \hline \end{array}$$

c

$$\begin{array}{r} 4281 \\ \times 3 \\ \hline \end{array}$$

d

$$\begin{array}{r} 4281 \\ \times 300 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 416 \\ \times 213 \\ \hline \end{array}$$

$$\begin{array}{r} 375 \\ \times 291 \\ \hline \end{array}$$

$$\begin{array}{r} 408 \\ \times 316 \\ \hline \end{array}$$

$$\begin{array}{r} 219 \\ \times 503 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 316 \\ \times 275 \\ \hline \end{array}$$

$$\begin{array}{r} 483 \\ \times 211 \\ \hline \end{array}$$

$$\begin{array}{r} 4231 \\ \times 213 \\ \hline \end{array}$$

$$\begin{array}{r} 3456 \\ \times 123 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 2175 \\ \times 243 \\ \hline \end{array}$$

$$\begin{array}{r} 3216 \\ \times 208 \\ \hline \end{array}$$

$$\begin{array}{r} 3090 \\ \times 752 \\ \hline \end{array}$$

$$\begin{array}{r} 6613 \\ \times 342 \\ \hline \end{array}$$

Perfect score: 16 My score: _____

Problem Solving

Solve each problem.

1. Each crate the men unloaded weighed 342 pounds. They unloaded 212 crates. How many pounds did they unload?

The men unloaded _____ pounds.

2. The school cafeteria expects to serve 425 customers every day. At that rate, how many meals will be served if the cafeteria is open 175 days a year?

_____ meals will be served.

3. There are 168 hours in one week. How many hours are there in 260 weeks?

There are _____ hours in 260 weeks.

4. There are 3,600 seconds in one hour and 168 hours in one week. How many seconds are there in one week?

There are _____ seconds in one week.

5. A jet carrying 128 passengers flew 2,574 miles. How many passenger-miles (number of passengers times number of miles traveled) would this be?

It would be _____ passenger-miles.

6. How many passenger-miles would be flown by the jet in problem 5, if it flew from Seattle to New Orleans, a distance of 2,098 miles?

It would be _____ passenger-miles.

7. A tank truck made 275 trips in a year. It hauled 5,950 gallons each trip. How many gallons did it haul that year?

It hauled _____ gallons.

8. Suppose the truck in problem 7 hauled 8,725 gallons each trip. How many gallons would it haul?

It would haul _____ gallons.

1.	2.
3.	4.
5.	6.
7.	8.

Perfect score: 8 My score: _____

CHAPTER 2 TEST

Multiply.

a
1. $\begin{array}{r} 31 \\ \times 3 \\ \hline \end{array}$

b
 $\begin{array}{r} 25 \\ \times 3 \\ \hline \end{array}$

c
 $\begin{array}{r} 276 \\ \times 6 \\ \hline \end{array}$

d
 $\begin{array}{r} 583 \\ \times 7 \\ \hline \end{array}$

2. $\begin{array}{r} 23 \\ \times 13 \\ \hline \end{array}$

$\begin{array}{r} 42 \\ \times 26 \\ \hline \end{array}$

$\begin{array}{r} 38 \\ \times 17 \\ \hline \end{array}$

$\begin{array}{r} 53 \\ \times 45 \\ \hline \end{array}$

3. $\begin{array}{r} 123 \\ \times 31 \\ \hline \end{array}$

$\begin{array}{r} 425 \\ \times 70 \\ \hline \end{array}$

$\begin{array}{r} 563 \\ \times 25 \\ \hline \end{array}$

$\begin{array}{r} 837 \\ \times 85 \\ \hline \end{array}$

4. $\begin{array}{r} 213 \\ \times 132 \\ \hline \end{array}$

$\begin{array}{r} 421 \\ \times 378 \\ \hline \end{array}$

$\begin{array}{r} 256 \\ \times 108 \\ \hline \end{array}$

$\begin{array}{r} 845 \\ \times 374 \\ \hline \end{array}$

5. $\begin{array}{r} 1221 \\ \times 312 \\ \hline \end{array}$

$\begin{array}{r} 1456 \\ \times 173 \\ \hline \end{array}$

$\begin{array}{r} 1827 \\ \times 570 \\ \hline \end{array}$

$\begin{array}{r} 3456 \\ \times 732 \\ \hline \end{array}$

Perfect score: 20 My score: _____

PRE-TEST—Division

NAME _____

Chapter 3

Divide.

a

b

c

d

1. $7 \overline{) 63}$

$6 \overline{) 54}$

$5 \overline{) 75}$

$4 \overline{) 92}$

2. $4 \overline{) 136}$

$5 \overline{) 370}$

$3 \overline{) 471}$

$2 \overline{) 960}$

3. $3 \overline{) 1539}$

$4 \overline{) 3672}$

$7 \overline{) 7105}$

$5 \overline{) 8605}$

4. $4 \overline{) 87}$

$2 \overline{) 75}$

$3 \overline{) 86}$

$3 \overline{) 781}$

5. $6 \overline{) 143}$

$4 \overline{) 9226}$

$2 \overline{) 1435}$

$5 \overline{) 6134}$

Perfect score: 20 My score: _____

Lesson 1 Division

$$\begin{array}{r} 9 \text{ ---} \rightarrow 9 \\ \times 5 \text{ ---} \rightarrow 5 \overline{)45} \\ \hline 45 \text{ ---} \rightarrow \downarrow \end{array}$$

$$\begin{array}{r} 9 \text{ ---} \rightarrow 5 \\ \times 5 \text{ ---} \rightarrow 9 \overline{)45} \\ \hline 45 \text{ ---} \rightarrow \downarrow \end{array}$$

If $5 \times 9 = 45$, then $45 \div 5 = 9$ and $45 \div 9 = 5$.

Divide.

*a**b**c**d**e**f*

1. $2 \overline{)6}$

$3 \overline{)9}$

$2 \overline{)4}$

$2 \overline{)8}$

$3 \overline{)6}$

$4 \overline{)8}$

2. $1 \overline{)5}$

$3 \overline{)3}$

$6 \overline{)0}$

$1 \overline{)9}$

$2 \overline{)2}$

$7 \overline{)7}$

3. $4 \overline{)28}$

$6 \overline{)42}$

$3 \overline{)18}$

$6 \overline{)36}$

$8 \overline{)32}$

$2 \overline{)14}$

4. $2 \overline{)10}$

$8 \overline{)72}$

$7 \overline{)42}$

$5 \overline{)20}$

$3 \overline{)15}$

$4 \overline{)36}$

5. $8 \overline{)24}$

$2 \overline{)18}$

$1 \overline{)8}$

$4 \overline{)32}$

$5 \overline{)25}$

$9 \overline{)81}$

6. $7 \overline{)35}$

$9 \overline{)27}$

$6 \overline{)24}$

$7 \overline{)49}$

$8 \overline{)48}$

$9 \overline{)36}$

7. $5 \overline{)40}$

$3 \overline{)24}$

$2 \overline{)16}$

$6 \overline{)48}$

$7 \overline{)28}$

$9 \overline{)54}$

8. $5 \overline{)15}$

$4 \overline{)12}$

$2 \overline{)12}$

$3 \overline{)0}$

$6 \overline{)54}$

$3 \overline{)27}$

9. $4 \overline{)20}$

$8 \overline{)56}$

$6 \overline{)30}$

$4 \overline{)24}$

$3 \overline{)21}$

$5 \overline{)30}$

10. $8 \overline{)16}$

$5 \overline{)35}$

$4 \overline{)16}$

$8 \overline{)64}$

$9 \overline{)63}$

$8 \overline{)40}$

Perfect score: 60

My score: _____

Problem Solving

Solve each problem.

1. There are 18 chairs and 6 tables in the room. There are the same number of chairs at each table. How many chairs are at each table?

There are _____ chairs.

There are _____ tables.

There are _____ chairs at each table.

2. Each box takes 3 minutes to fill. It took 18 minutes to fill all the boxes. How many boxes are there?

It takes _____ minutes to fill all the boxes.

It takes _____ minutes to fill 1 box.

There are _____ boxes.

3. Bob, Joe, Pete, Tom, Dick, and Jim share 6 sandwiches. How many sandwiches does each boy get?

There are _____ sandwiches in all.

The sandwiches are shared among _____ boys.

Each boy gets _____ sandwich.

4. Bill and 8 friends each sold the same number of tickets. They sold 72 tickets in all. How many tickets were sold by each person?

Each person sold _____ tickets.

5. Forty-eight oranges are in a crate. The oranges are to be put into bags of 6 each. How many bags can be filled?

_____ bags could be filled.

6. Jim has a wire that is 42 inches long. He cuts the wire into 7-inch lengths. How many pieces of wire will he have?

He will have _____ pieces of wire.

1.

2.

3.

4.

5.

6.

Lesson 2 Division

Study how to divide 738 by 3.

X|300600900

738 is between 600 and 900, so $738 \div 3$ is between 200 and 300. The hundreds digit is 2.

2

3|738

600

138

(200×3)

Subtract.

X|1020304050

138 is between 120 and 150, so $138 \div 3$ is between 40 and 50. The tens digit is 4.

24

3|738

600

138

120

18

(40×3)

Subtract.

X|369121518

$18 \div 3 = 6$, so the ones digit is 6.

246

3|738

600

138

120

18

18

(6×3)

Subtract.

remainder (r) → 0

Divide.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1. 8 96	4 72	6 72	3 81	4 68
2. 2 74	3 87	5 75	7 784	3 768
3. 8 296	9 315	6 252	6 462	5 930

Perfect score: 15 My score: _____

Problem Solving

Solve each problem.

1. There are 84 scouts in all. Six will be assigned to each tent. How many tents are there?

There are _____ scouts in all.

There are _____ scouts in each tent.

There are _____ tents.

2. Seven people each worked the same number of hours. They worked 91 hours in all. How many hours were worked by each person?

_____ hours were worked.

_____ people worked these hours.

_____ hours were worked by each person.

3. A group of three is a trio. How many trios could be formed with 72 people?

_____ trios could be formed.

4. A factory shipped 848 cars to 4 cities. Each city received the same number of cars. How many cars were shipped to each city?

_____ cars were shipped.

_____ cities received the cars.

_____ cars were shipped to each city.

5. Malcolm, his brother, and sister have 702 stamps in all. Suppose each takes the same number of stamps. How many will each get?

Each will get _____ stamps.

6. There are 6 outs in an inning. How many innings would have to be played to get 348 outs?

_____ innings would have to be played.

1.

2.

3.

4.

5.

6.

Lesson 3 Division

Study how to divide 854 by 4.

X|

4008001200

854

854 ÷ 4 is between 200 and 300. The hundreds digit is 2.

2

4|854

800

54

(200 × 4)

Subtract.

X|

4080120160

54

54 ÷ 4 is between 10 and 20. The tens digit is 1.

21

4|854

800

54

40

14

(10 × 4)

Subtract.

X|

48121620

14

14 ÷ 4 is between 3 and 4. The ones digit is 3.

213 r2

4|854

800

54

40

14

12

2

(3 × 4)

Subtract.

Divide.

a	b	c	d	e
1. 3 82	5 86	4 97	3 76	2 47
2. 7 83	5 69	6 224	4 127	2 380
3. 4 231	5 653	7 962	2 483	6 832

Perfect score: 15 My score: _____

Problem Solving



Solve each problem.

1. There are 160 packages on 4 large carts. Each cart holds the same number of packages. How many packages are on each cart?

Each cart has _____ packages.

2. There are 160 packages. To deliver most of the packages, it will take 3 small planes. Each plane will take the same number of packages. How many packages will each plane take? How many packages will be left over?

Each plane will take _____ packages.

There will be _____ packages left over.

3. Suppose there had been 890 packages to be delivered by 6 planes. Each plane is to take the same number of packages and as many as possible. How many packages will each plane take? How many will be left over?

Each plane will take _____ packages.

There will be _____ packages left over.

Perfect score: 5 My score: _____

Lesson 4 Division

$$\begin{array}{r} 235 \\ 8 \overline{)1880} \\ \underline{1600} \\ 280 \\ \underline{240} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

← These should be the same.

Check
$$\begin{array}{r} 235 \\ \times 8 \\ \hline 1880 \end{array}$$

$$\begin{array}{r} 178 \text{ r}2 \\ 3 \overline{)536} \\ \underline{300} \\ 236 \\ \underline{210} \\ 26 \\ \underline{24} \\ 2 \end{array}$$

← These should be the same.

Check
$$\begin{array}{r} 178 \\ \times 3 \\ \hline 534 \\ + 2 \\ \hline 536 \end{array}$$

To check $1880 \div 8 = 235$,
multiply 235 by 8. The answer should be _____.

To check $536 \div 3 = 178 \text{ r}2$,
multiply 178 by 3 and then add 2. The answer should be _____.

Divide. Check each answer.

- | <i>a</i> | <i>b</i> | <i>c</i> |
|-------------------------|----------------------|----------------------|
| 1. $4 \overline{)1104}$ | $8 \overline{)1760}$ | $2 \overline{)4632}$ |
| 2. $3 \overline{)379}$ | $5 \overline{)421}$ | $4 \overline{)762}$ |
| 3. $3 \overline{)1058}$ | $6 \overline{)726}$ | $7 \overline{)2117}$ |

Perfect score: 9 My score: _____

Problem Solving

Solve each problem. Check each answer.

1. How many bags of 7 oranges each can be filled from a shipment of 341 oranges? How many oranges will be left over?

_____ bags can be filled.

_____ oranges will be left over.

2. Beverly has \$2.38 (238 cents) to buy pencils for 8¢ each. How many pencils can she buy? How many cents will she have left?

She can buy _____ pencils.

She will have _____ cents left.

3. There are 6 stamps in each row. How many complete rows can be filled with 1,950 stamps? How many stamps will be left over?

_____ rows will be filled.

_____ stamps will be left over.

4. Daphne had 958 pennies. She exchanged them for nickels. How many nickels did she get? How many pennies did she have left over?

She got _____ nickels.

She had _____ pennies left over.

5. Last year Mr. Gomez worked 1,983 hours. How many 8-hour days was this? How many hours are left over?

It was _____ 8-hour days.

_____ hours are left over.

6. There are 7,633 points to be divided among Paul, Fred, and Leroy. Each boy is to receive the same number of points. How many points will each receive? How many points will be left over?

Each boy will receive _____ points.

_____ points will be left over.

1.

2.

3.

4.

5.

6.

Perfect score: 12 My score: _____

CHAPTER 3 TEST

Divide.

a

b

c

d

1. $4 \overline{)96}$

$7 \overline{)84}$

$3 \overline{)79}$

$5 \overline{)68}$



2. $4 \overline{)732}$

$5 \overline{)175}$

$7 \overline{)615}$

$2 \overline{)647}$

3. $8 \overline{)1720}$

$4 \overline{)5216}$

$4 \overline{)1530}$

$3 \overline{)6323}$

4. $3 \overline{)84}$

$6 \overline{)76}$

$8 \overline{)94}$

$2 \overline{)78}$

5. $4 \overline{)1256}$

$3 \overline{)6343}$

$5 \overline{)1842}$

$6 \overline{)7206}$

Perfect score: 20 My score: _____

PRE-TEST—Division

NAME _____

Chapter 4

Divide.

a

b

c

d

1. $13 \overline{) 78}$

$14 \overline{) 98}$

$12 \overline{) 65}$

$15 \overline{) 95}$

2. $24 \overline{) 312}$

$37 \overline{) 962}$

$12 \overline{) 586}$

$23 \overline{) 550}$

3. $27 \overline{) 3564}$

$74 \overline{) 7252}$

$36 \overline{) 2026}$

$34 \overline{) 3830}$

4. $16 \overline{) 768}$

$52 \overline{) 2724}$

$18 \overline{) 310}$

$14 \overline{) 56}$

5. $34 \overline{) 4284}$

$53 \overline{) 2120}$

$26 \overline{) 964}$

$11 \overline{) 418}$

Perfect score: 20 My score: _____

Lesson 1 Division

Study how to divide 94 by 13.

Since $10 \times 13 = 130$ and 130 is greater than 94, there is no tens digit.

$13 \overline{)94}$

X	1	2	3	4	5	6	7	8
13	13	26	39	52	65	78	91	104

94 is between 91 and 104.
 $94 \div 13$ is between 7 and 8.
The *quotient* is 7.

$13 \overline{)94}$
 91 (7 × 13)
 —
 3 (94 − 91)

Record the remainder like this.

$13 \overline{)94} \begin{matrix} 7 \text{ r} 3 \\ 91 \\ \hline 3 \end{matrix}$ remainder

Divide.

a *b* *c* *d* *e*

1. $12 \overline{)84}$ $13 \overline{)78}$ $19 \overline{)95}$ $16 \overline{)84}$ $14 \overline{)98}$

2. $15 \overline{)92}$ $14 \overline{)75}$ $16 \overline{)74}$ $13 \overline{)80}$ $12 \overline{)92}$

3. $17 \overline{)68}$ $23 \overline{)92}$ $32 \overline{)84}$ $18 \overline{)72}$ $27 \overline{)91}$

Perfect score: 15 My score: _____

Problem Solving

Solve each problem.

1. The pet store has 84 birds. They have 14 large cages. There are the same number of birds in each cage. How many birds are in each cage?

_____ birds are in each cage.

2. The pet store also has 63 kittens. There are 12 cages with the same number of kittens in each. The rest of the kittens are in the display window. How many kittens are in each cage? How many kittens are in the display window?

_____ kittens are in each cage.

_____ kittens are in the display window.

3. There are 60 guppies in a large tank. If the pet store puts 15 guppies each in a smaller tank, how many smaller tanks will be needed?

_____ smaller tanks will be needed.

4. There are 72 boxes of pet food on a shelf. The boxes are in rows of 13 each. How many full rows of boxes are there? How many boxes are left over?

There are _____ full rows of boxes.

There are _____ boxes left over.

5. There are 80 cages to be cleaned. Each of the store's 19 employees is to clean the same number of cages. The owner will clean any leftover cages. How many cages will each employee clean? How many cages will the owner clean?

Each employee will clean _____ cages.

The owner will clean _____ cages.

6. There are 52 puppies. There are 13 cages. If each cage contains the same number of puppies, how many puppies are in each cage?

There are _____ puppies in each cage.

Lesson 2 Division

Study how to divide 219 by 12.

X				
	120	240	360	480
		219		

**219 ÷ 12 is between 10 and 20.
The tens digit is 1.**

$$\begin{array}{r} 1 \\ 12 \overline{) 219} \\ \underline{120} \\ 99 \end{array}$$

X
12
24
36
48
60
72
84
96
108

99 ----- ↗

$99 \div 12$ is between 8 and 9.
The ones digit is 8.

$$\begin{array}{r} 18 \text{ r}3 \\ 12 \overline{)219} \\ \underline{120} \\ 99 \\ \underline{96} \\ 3 \end{array}$$

Divide.

a

b

C

 d e

1. $13 \overline{) 351}$

$$16 \overline{) 256}$$

$$17 \overline{) 323}$$

$$14 \overline{) 490}$$

$$12 \overline{) 814}$$

2. $26 \overline{) 316}$

$$31 \overline{) 413}$$

$$17 \overline{) 212}$$

$$24 \overline{) 360}$$

$$28 \overline{) 564}$$

Perfect score: 10 My score: _____

Problem Solving

Solve each problem.

1. There are 448 reams of paper in the supply room. Fourteen reams are used each day. At that rate, how many days will the supply of paper last?

The supply of paper will last _____ days.

2. There are 338 cases on a truck. The truck will make 12 stops and leave the same number of cases at each stop. How many cases will be left at each stop? How many cases will still be on the truck?

_____ cases will be left at each stop.

_____ cases will still be on the truck.

3. There are 582 tickets to be sold. Each of 24 pupils is to receive the same number of tickets and as many as possible. The teacher is to sell any tickets left over. How many tickets is each pupil to sell? How many is the teacher to sell?

Each pupil is to sell _____ tickets.

The teacher is to sell _____ tickets.

4. A machine operated 38 hours and produced 988 parts. The same number of parts was produced each hour. How many parts were produced each hour?

_____ parts are produced each hour.

5. After 24 hours, the machine in problem 4 had produced 582 parts. About how many parts is the machine producing each hour? Is it producing at the rate it is designed to do?

About _____ parts are being produced each hour.

The machine _____ producing as designed.

6. Suppose the machine in problem 4 was operated 19 hours. During this time 988 parts were produced. The same number of parts was produced each hour. How many were produced each hour?

_____ parts are produced each hour.

1.

2.

3.

4.

5.

6.

Lesson 3 Division

8 r2

12 $\overline{)98}$

96

2

These should be the same.

Check

8

$\times 12$

16

80

96

+ 2

98

To check $98 \div 12 = 8 \text{ r}2$, multiply 8
by _____ and add _____ to that product.
The answer should be _____.

12

34 $\overline{)408}$

340

68

68

0

These should be the same.

Check

12

$\times 34$

48

360

408

To check $408 \div 34 = 12$, multiply 12
by _____. The answer should be _____.

Divide. Check each answer.

a

b

c

1. 16 $\overline{)88}$

14 $\overline{)84}$

23 $\overline{)94}$
2. 19 $\overline{)114}$

36 $\overline{)756}$

32 $\overline{)836}$
3. 25 $\overline{)330}$

36 $\overline{)672}$

45 $\overline{)810}$

Perfect score: 9 My score: _____

Problem Solving

Solve each problem. Check each answer.

1. Lucinda had 59 cents to buy pencils that cost 14 cents each. How many pencils could she buy? How many cents would she have left over?

She could buy _____ pencils.

She would have _____ cents left.

2. The grocer has 98 cans of beans to put on a shelf. He thinks he can put 16 cans in each row. If he does, how many rows will he have? How many cans will be left over?

He will have _____ rows.

_____ cans will be left over.

3. The grocer in problem 2 could only put 13 cans in each row. How many rows does he have? How many cans are left over?

He has _____ rows.

_____ cans are left over.

4. There are 774 cartons ready for shipment. Only 27 cartons can be shipped on each truck. How many full truckloads will there be? How many cartons will be left?

There will be _____ full loads.

_____ cartons will be left.

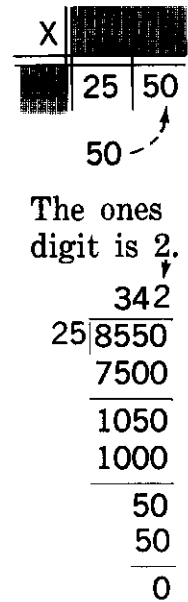
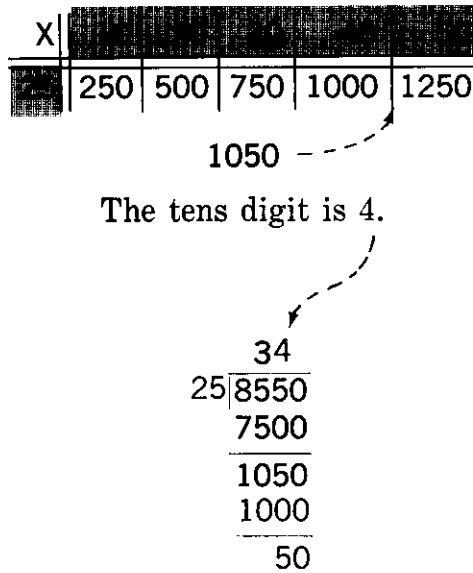
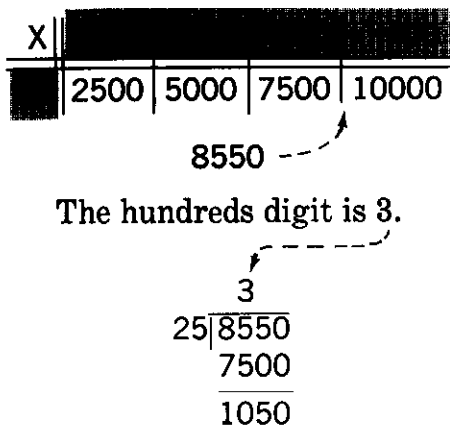
5. There are 605 books in the storage room. There are the same number of books in each of 17 full boxes and the rest in an extra box. How many books are in each full box? How many books are in the extra box?

_____ books are in each full box.

_____ books are in the extra box.

Lesson 4 Division

Study how to divide 8550 by 25.



Divide.

a

b

C

 d

1. $32 \overline{) 5280}$

$$43 \overline{) 6751}$$

$$26 \overline{) 6318}$$

$$75 \overline{) 9150}$$

2. $42 \overline{) 8956}$

$$31 \overline{) 9875}$$

$$23 \overline{) 3844}$$

$$63 \overline{) 9008}$$

3. $35 \overline{) 1960}$

$$75 \overline{) 3900}$$

$$63 \overline{) 2656}$$

$$27 \overline{) 1430}$$

Perfect score: 12

My score: _____

Problem Solving

Solve each problem.

1. A truck is loaded with 8,073 kilograms of food. Each case of food weighs 23 kilograms. How many cases are on the truck?

_____ cases are on the truck.

2. During an 8-hour shift, one machine was able to package 8,215 boxes of rice. These boxes were packed 24 to a carton. How many full cartons of rice would this be? How many boxes would be left over?

There would be _____ full cartons.

_____ boxes would be left over.

3. The bakery uses 75 pounds of butter in each batch of butter-bread dough. How many batches of dough could be made with 6,300 pounds of butter?

_____ batches of dough could be made.

4. There are 2,030 pupils in school. How many classes of 28 pupils each could there be? How many pupils would be left over?

There could be _____ full classes.

_____ pupils would be left over.

5. In 27 days 3,888 gallons of oil were used. The same amount of oil was used each day. How much oil was used each day?

_____ gallons were used each day.

6. There were 5,100 parts to be packed. The parts are to be packed 24 to a box. How many boxes can be filled? How many parts would be left over?

_____ full boxes can be packed.

_____ parts would be left over.

1.

2.

3.

4.

5.

6.

Lesson 5 Division

Divide.

a

b

c

d

1. $28 \overline{) 776}$

$42 \overline{) 5176}$

$19 \overline{) 95}$

$33 \overline{) 133}$

2. $12 \overline{) 2606}$

$22 \overline{) 6754}$

$24 \overline{) 792}$

$11 \overline{) 1716}$

3. $14 \overline{) 84}$

$89 \overline{) 801}$

$75 \overline{) 753}$

$16 \overline{) 2616}$

4. $75 \overline{) 6375}$

$23 \overline{) 5543}$

$25 \overline{) 8000}$

$25 \overline{) 800}$

5. $15 \overline{) 6009}$

$60 \overline{) 1860}$

$20 \overline{) 7020}$

$48 \overline{) 1704}$

Perfect score: 20 My score: _____

Problem Solving



ORDER FORM
6,912 Zanappas

Solve each problem.

1. An order was received for 6,912 zanappas. Machine A can produce the zanappas in 12 hours. At that rate, how many zanappas would be produced each hour?

_____ zanappas would be produced each hour.

2. It would take machine B 24 hours to produce the zanappas needed to fill the order. At that rate, how many zanappas would be produced each hour?

_____ zanappas would be produced each hour.

3. Machine C could produce the zanappas needed to fill the order in 48 hours. At that rate, how many zanappas could be produced each hour?

_____ zanappas could be produced each hour.

4. How many zanappas could be produced if all three machines operated for a period of 8 hours?

_____ zanappas could be produced.

1.	2.
3.	4.

Perfect score: 4 My score: _____

CHAPTER 4 TEST

Divide.

a

b

c

d

1. $12 \overline{) 72}$

$13 \overline{) 89}$

$11 \overline{) 94}$

$17 \overline{) 68}$

2. $17 \overline{) 265}$

$11 \overline{) 858}$

$31 \overline{) 961}$

$12 \overline{) 506}$

3. $36 \overline{) 4366}$

$42 \overline{) 1890}$

$73 \overline{) 3934}$

$14 \overline{) 2184}$

4. $13 \overline{) 169}$

$26 \overline{) 3175}$

$16 \overline{) 75}$

$36 \overline{) 144}$

5. $54 \overline{) 1458}$

$25 \overline{) 2095}$

$28 \overline{) 573}$

$42 \overline{) 99}$



Perfect score: 20 My score: _____

PRE-TEST—Division

NAME _____ Chapter 5

Divide.

a

b

c

d

1. $25 \overline{) 75}$

$25 \overline{) 750}$

$25 \overline{) 7500}$

$25 \overline{) 75000}$

2. $38 \overline{) 42560}$

$17 \overline{) 40339}$

$33 \overline{) 73326}$

$25 \overline{) 21450}$

3. $42 \overline{) 89523}$

$16 \overline{) 97978}$

$25 \overline{) 62940}$

$15 \overline{) 31762}$

4. $27 \overline{) 12204}$

$48 \overline{) 27648}$

$62 \overline{) 19664}$

$72 \overline{) 31968}$

Perfect score: 16 My score: _____

Lesson 1 Division

Study how to divide 24567 by 12.

X 120002400036000 24567 The thousands digit is 2. 2 12 24567 24000 567	X 12002400 567 ÷ 12 is less than 100. The hundreds digit is 0. 20 12 24567 24000 567	X 360480600 567 The tens digit is 4. 204 12 24567 24000 567 480 87	X 728496 87 The ones digit is 7. 2047 r3 12 24567 24000 567 480 87 84 3
--	--	--	---

Divide.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. 36 4500	26 8430	92 7911	25 3575
2. 24 77184	92 39754	56 69104	23 17342

Perfect score: 8 My score: _____

Problem Solving

Solve each problem.

1. In 27 days, 6,939 orders were filled. The same number of orders was filled each day. How many orders were filled each day?

_____ orders were filled each day.

2. Yesterday 5,650 school children came in buses to visit the museum. How many full bus loads of pupils were there if 75 pupils make up a full load? How many pupils were on the partially filled bus?

There were _____ full bus loads.

_____ pupils were on the partially filled bus.

3. The inventory slip shows that there are 7,840 pairs of stockings in the warehouse. There are 32 pairs in each box. How many boxes of stockings should there be in the warehouse?

There should be _____ boxes of stockings.

4. A factory produced 7,605 zimbits yesterday. The zimbits are packed 24 to a box. How many full boxes of zimbits were produced? How many zimbits were left over?

It was _____ full boxes.

_____ zimbits are left over.

5. The grandstand is separated into 16 sections. Each section has the same number of seats. There are 8,640 seats in all. How many seats are in each section?

There are _____ seats in each section.

6. Suppose there were 9,600 seats in the grandstand in problem 5. How many seats would be in each section?

There would be _____ seats in each section.

1.

2.

3.

4.

5.

6.

Lesson 2 Division

Study how to divide 24205 by 75.

X| 7500 | 15000 | 22500 | 30000

24205

The hundreds digit is 3.

3

75|24205

22500

1705

X| 750 | 1500 | 2250 | 3000

1705

The tens digit is 2.

32

75|24205

22500

1705

1500

205

X| 75 | 150 | 225 | 300

205

The ones digit is 2.

322 r55

75|24205

22500

1705

1500

205

150

55

Divide.

- a

1. 43|1 7 7 1 6
- b

64|3 2 7 6 8
- c

27|2 2 0 0 5
- d

28|6 0 0 8 8
2.

33|2 7 3 1 3
- 31|9 6 8 4 3
- 43|8 9 8 0 0
- 59|4 1 6 4 5

Perfect score: 8 My score: _____

Problem Solving

Solve each problem.

1. A bus can carry 86 passengers. How many such buses would be needed to carry 20,898 passengers?

_____ buses would be needed.

2. There are 16 ounces in one pound. How many pounds are there in 39,238 ounces? How many ounces are left over?

There are _____ pounds.

There are _____ ounces left over.

3. There are 31,500 pounds of salt to be put into bags with 58 pounds in each bag. How many full bags of salt would there be? How many pounds would be left over?

There would be _____ full bags.

_____ pounds would be left over.

4. It takes 72 hours for one machine to produce 14,616 parts. The machine produces the same number of parts each hour. How many parts does it produce each hour?

It produces _____ parts each hour.

5. Suppose the machine in problem 4 could produce the parts in 36 hours. How many parts would it produce each hour?

It would produce _____ parts each hour.

6. Suppose the machine in problem 4 could produce the parts in 18 hours. How many parts would it produce each hour?

It would produce _____ parts each hour.

7. Suppose the machine in problem 4 could produce the parts in 12 hours. How many parts would it produce each hour?

It would produce _____ parts each hour.

1.	
2.	
3.	
4.	
5.	
6.	
7.	

Lesson 3 Division

2543 r8

16 $\overline{)40696}$

32000

8696

8000

696

640

56

48

8

These
should
be the
same.

Check

2543

$\times 16$

15258

25430

40688

+ 8

40696

To check $40696 \div 16 = 2543 \text{ r}8$, multiply
2543 by _____ and then add _____ to this
product. The answer should be _____.

Divide. Check each answer.

a

b

1. $47 \overline{)99932}$

$54 \overline{)33100}$

2. $38 \overline{)27590}$

$46 \overline{)38277}$

3. $75 \overline{)95100}$

$24 \overline{)30900}$

Perfect score: 6 My score: _____

Problem Solving

Solve each problem. Check each answer.

1. There are 35 gates into the stadium and 15,330 people attended the game. The same number entered through each gate. How many entered each gate?

_____ people entered each gate.

2. A garage used 16,434 liters of oil in 83 days. The same amount of oil was used each day. How much oil was used each day?

_____ liters were used each day.

3. During 6 months, 77 employees worked 67,639 hours. Suppose each employee worked the same number of hours. How many hours did each work? How many hours would be left over?

Each employee worked _____ hours.

_____ hours are left over.

4. Ninety-five containers of the same size were filled with a total of 82,840 kilograms of coal. How many kilograms of coal were in each container?

_____ kilograms were in each container.

5. There are 46,963 pupils attending 52 schools in the city. Suppose the same number attend each school. How many pupils would attend each school? How many would be left over?

_____ pupils would attend each school.

_____ pupils would be left over.

6. Suppose there were twice as many pupils in problem 5. How many pupils would attend each school? How many would be left over?

_____ pupils would attend each school.

_____ pupils would be left over.

1.

2.

3.

4.

5.

6.

Perfect score: 9 My score: _____

Lesson 4 Division

Divide.

a

b

c

d

1. $38 \overline{) 72}$

$23 \overline{) 601}$

$32 \overline{) 4640}$

$34 \overline{) 43877}$

2. $24 \overline{) 54}$

$24 \overline{) 540}$

$24 \overline{) 5400}$

$24 \overline{) 54000}$

3. $12 \overline{) 87}$

$21 \overline{) 168}$

$42 \overline{) 1491}$

$38 \overline{) 21584}$

4. $87 \overline{) 95}$

$24 \overline{) 369}$

$75 \overline{) 6005}$

$45 \overline{) 30605}$

Perfect score: 16 My score: _____

Problem Solving

Solve each problem.

1. Paula is to read 228 pages in 4 sessions. She will read the same number of pages each session. How many pages will she read each session?

She will read _____ pages each session.

2. The square of a number is found by multiplying the number by itself. Harold said that 2,916 is the square of 54. Is he right?

Harold _____ right.

3. The astronauts are now 8,640 minutes into their flight. How many hours would this be? How many days?

It would be _____ hours.

It would be _____ days.

4. In five hours 15,190 cans came off the assembly line. There are 88 cans packed in each carton. How many full cartons are there? How many cans are in the partially filled carton?

There are _____ full cartons.

There are _____ cans in the partial carton.

5. A satellite has just completed its 94th orbit. It has been in orbit for 13,160 hours. How long does it take to make a complete orbit?

It takes _____ hours to make one orbit.

6. How long will the satellite in problem 5 be in orbit after it has completed its 100th orbit?

It will have been in orbit _____ hours.

1.

2.

3.

4.

5.

6.

CHAPTER 5 TEST

Divide.

a

b

c

 d

1. $97 \overline{) 873}$

56 | 9 5 2

$$70 \overline{) 2870}$$

63 | 6 6 1 5

$$2. \quad 31 \overline{) 8308}$$

41 | 5 0 4 3

11 | 1 2 3 2

77 | 9 8 3 1

3. $32 \overline{) 23744}$

$$93 \overline{) 31657}$$

$$51 \overline{) 21483}$$

$$43 \overline{) 31605}$$

4. $25 \overline{) 23375}$

17 | 3 4 0 9 6

$$37 \overline{) 65510}$$

$$77 \overline{) 92324}$$

5. $35 \overline{) 35035}$

$$25 \overline{) 10025}$$

$$31 \overline{) 93006}$$

$$13 \overline{) 10413}$$

Perfect score: 20 My score: _____

PRE-TEST—Metric Measurement

NAME _____

Chapter 6

Find the length of each line segment to the nearest centimeter (cm).
Then find the length of each line segment to the nearest millimeter (mm).

a

b

1. _____ cm _____ mm 

2. _____ cm _____ mm 

Find the perimeter and the area of each rectangle.

3. *perimeter*: _____ centimeters

4. *perimeter*: _____ millimeters

area: _____ square centimeters

area: _____ square millimeters



2 centimeters

3 centimeters



15 millimeters

15 millimeters

Complete the following.

a

b

5. 7 centimeters = _____ millimeters

28 meters = _____ centimeters

6. 9 meters = _____ centimeters

49 meters = _____ millimeters

7. 8 kilometers = _____ meters

16 liters = _____ milliliters

8. 5 kiloliters = _____ liters

5 kilograms = _____ grams

9. 2 grams = _____ milligrams

14 centimeters = _____ millimeters

10. 40 liters = _____ milliliters

42 meters = _____ centimeters

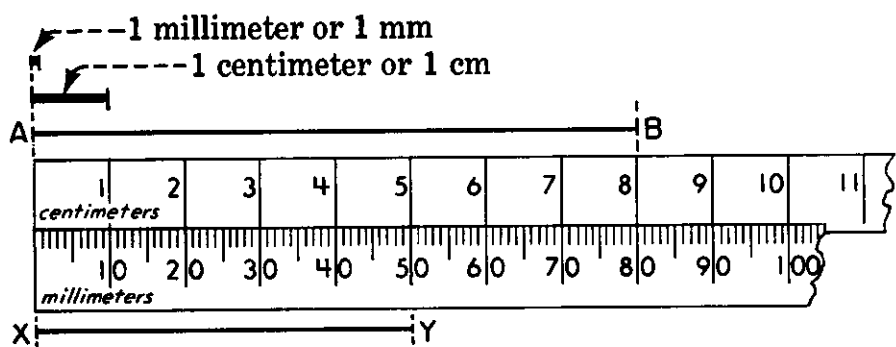
11. 3 kiloliters = _____ liters

35 meters = _____ millimeters

12. 60 kilograms = _____ grams

34 kilometers = _____ meters

Perfect score: 24 My score: _____



Line segment AB is 8 centimeters long.

XY is _____ centimeters long.

Line segment AB is 80 millimeters long.

XY is _____ millimeters long.

Find the length of each line segment to the nearest centimeter.
Then find the length of each line segment to the nearest millimeter.

- | | <i>a</i> | <i>b</i> |
|----|----------|----------------|
| 1. | _____ cm | _____ mm _____ |
| 2. | _____ cm | _____ mm _____ |
| 3. | _____ cm | _____ mm _____ |
| 4. | _____ cm | _____ mm _____ |

Find the length of each line segment to the nearest millimeter.

5. _____ mm _____
6. _____ mm _____
7. _____ mm _____
8. _____ mm _____

Draw a line segment for each measurement.

9. 6 cm
10. 45 mm

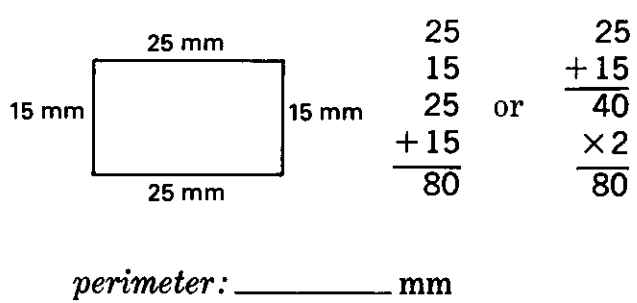
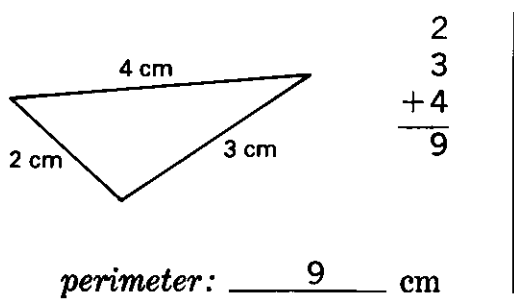
Perfect score: 14

My score: _____

Lesson 2 Perimeter

NAME _____

The distance around a figure is called its **perimeter**.



Measure each side in centimeters. Then find the perimeter of each figure.

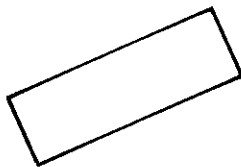
a
1. _____ cm



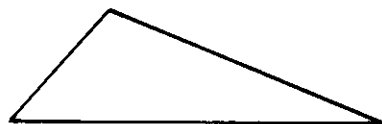
b
_____ cm



2. _____ cm

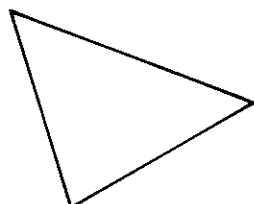


_____ cm



Measure each side in millimeters. Then find the perimeter of each figure.

3. _____ mm



_____ mm



Perfect score: 6 My score: _____

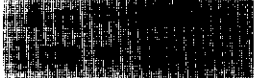
Lesson 3 Meter and Kilometer

NAME _____

A baseball bat is about 1 meter long.

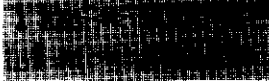
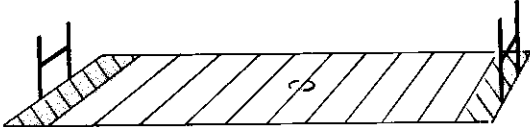


1 meter (m) or 100 cm



If you run from goal line to goal line on a football field 11 times, you will run about 1 kilometer.

1000 meters is the same distance as 1 kilometer (km).



Use a meter stick to find the following to the nearest meter.

a

b

- | | |
|--------------------------------|----------------------------|
| 1. length of your room _____ m | width of a door _____ m |
| 2. width of your room _____ m | width of a window _____ m |
| 3. height of a door _____ m | height of a window _____ m |

Answer each question.

4. Michelle's height is 105 centimeters. Is she taller or shorter than 1 meter?

She is _____ than 1 meter.

5. Are you taller or shorter than 1 meter?

I am _____ than 1 meter.

6. Roberta wants to swim 1 kilometer. How many meters should she swim?

She should swim _____ meters.

7. Sung-Chi ran 1,500 meters. Leona ran 1 kilometer. Who ran farther? How much farther?

_____ ran _____ meters farther.

4.
5.
6.
7.

Perfect score: 11 My score: _____

Lesson 4 Units of Length

NAME _____

Study how to change from one metric unit to another.

9 km = ? m

1 km = 1000 m

9 km = (9 × 1000) m

9 km = 9000 m

850 mm = ? cm

10 mm = 1 cm

850 mm = (850 ÷ 10) cm

850 mm = cm

Complete the following.

<i>a</i>		<i>b</i>	
1. 50 km = _____ m		600 cm = _____ m	
2. 70 mm = _____ cm		2000 mm = _____ m	
3. 9 cm = _____ mm		8000 m = _____ km	
4. 3 m = _____ cm		5000 cm = _____ m	
5. Ted is 4000 meters from school. Susan is 3 kilometers from school. How many meters from school is Susan? Who is farther from school? How much farther?		5.	
Susan is _____ meters from school.			
_____ is _____ meters farther from school.			
6. Maria is 134 centimeters tall. Su-Lyn is 1300 millimeters tall. Charles is 141 centimeters tall. Who is tallest? Who is shortest?		6.	
_____ is tallest.			
_____ is shortest.			
7. What is your height in centimeters? In millimeters?		7.	
I am _____ centimeters tall.			
I am _____ millimeters tall.			

Perfect score: 15 My score: _____

To find the area of a rectangle, multiply the measure of its length by the measure of its width.

4 m

2 m

4

×

2

8

area: 8 square meters

4 km

3 km

4

×

3

12

area: square kilometers

Find the area of each rectangle.

a

1. square kilometers square millimeters square meters

5 km

2 km

b

2. square meters square kilometers square centimeters

60 mm

50 mm

c

3. square meters square kilometers square centimeters

7 m

6 m

35 m

35 m

27 km

20 km

15 cm

10 cm

	length	width	area
3.	9 km	6 km	_____ square kilometers
4.	18 cm	7 cm	_____ square centimeters
5.	14 m	10 m	_____ square meters
6.	175 mm	25 mm	_____ square millimeters
7.	152 cm	100 cm	_____ square centimeters

Perfect score: 11 My score: _____

63

Problem Solving

Solve each problem.

1. Find a rectangular room. Measure its length and width to the nearest meter. Find the perimeter of the room. Find the area of the room.

length: _____ meters

width: _____ meters

perimeter: _____ meters

area: _____ square meters

2. Find a rectangular tabletop or desk. Measure its length and width to the nearest meter. Find the perimeter of the top. Find the area of the top.

length: _____ meters

width: _____ meters

perimeter: _____ meters

area: _____ square meters

3. Use the front cover of this book. Measure its length and width to the nearest centimeter. Find the perimeter of the cover. Find the area of the front cover.

perimeter: _____ centimeters

area: _____ square centimeters

4. Use the rectangle at the right. Measure its length and width to the nearest millimeter. Find the perimeter of the rectangle. Find the area of the rectangle.

perimeter: _____ millimeters

area: _____ square millimeters

1.

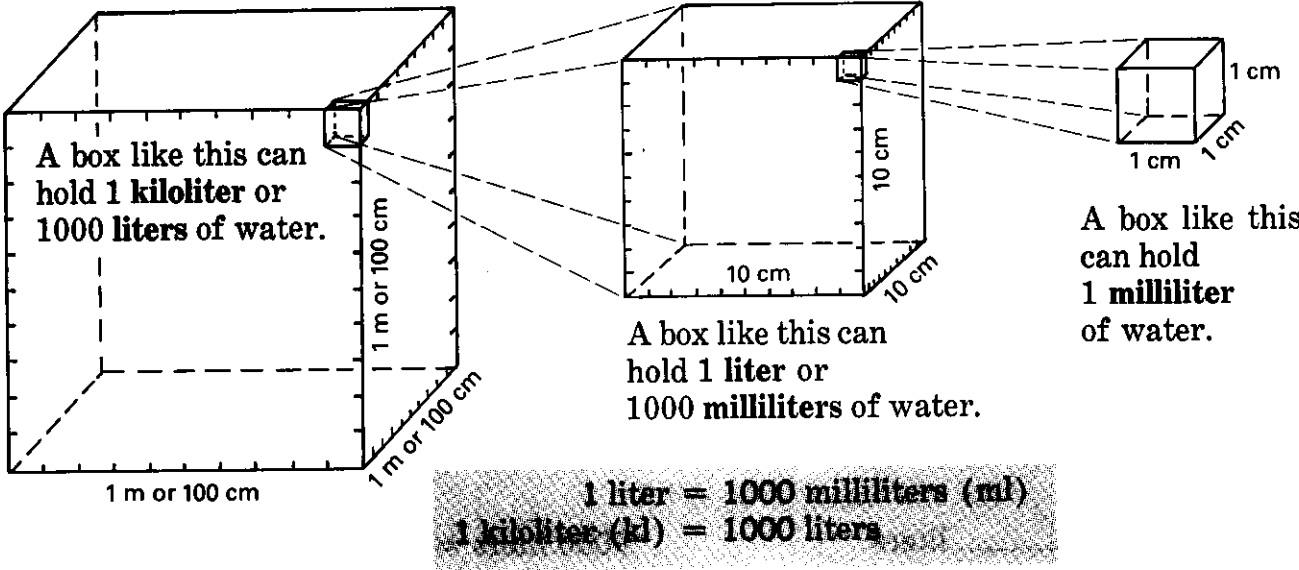
2.

3.

4.

35 mm

24 mm



Solve each problem.

1. A teaspoon holds about 5 milliliters. A recipe calls for 2 teaspoons of vanilla. How many milliliters is that?

That is _____ milliliters.

2. A liter is slightly more than 4 cups. Do you drink more or less than a liter of milk every day?

I drink _____ than a liter every day.

3. To make punch, 8 cups of fruit juice are used. About how many liters would that be?

That would be _____ liters.

4. Two bathtubs filled with water would be about 1 kiloliter of water. Suppose your family uses 10 tubfuls of water a week. How many kiloliters of water would be used in a week?

_____ kiloliters would be used in a week.

5. A tank holds 1000 liters. How many kiloliters would it hold?

It would hold _____ kiloliter.

1.	
2.	
3.	
4.	
5.	

Perfect score: 5 My score: _____

Lesson 7 Units of Capacity

NAME _____

19 liters = ? ml

7000 liters = ? kl

1 liter = 1000 ml

1000 liters = 1 kl

19 liters = (19 × 1000) ml

7000 liters = (7000 ÷ 1000) kl

19 liters = 19,000 ml

7000 liters = kl

Complete the following.

a

b

1. 7 liters = _____ ml

3000 ml = _____ liters

2. 2 kl = _____ liters

9000 liters = _____ kl

3. 20 liters = _____ ml

48 kl = _____ liters

4. 4000 ml = _____ liters

5000 liters = _____ kl

5. Lisa filled an ice-cube tray with water. Do you think she used about 1 *milliliter*, 1 *liter*, or 1 *kiloliter* of water?

She used 1 _____ of water.

6. Carlos said he drank 500 milliliters of milk. Larry said he drank 1 liter of milk. Who drank more milk? How many milliliters more?

_____ drank _____ milliliters more milk.

7. The gasoline tank on Mrs. Mohr's car holds 85 liters. It took 27 liters of fuel to fill the tank. How much fuel was in the tank before it was filled?

_____ liters were in the tank.

8. A tank can hold 4000 liters of water. There are 3 kiloliters of water in the tank. How many liters of water are needed to fill the tank?

_____ liters are needed.

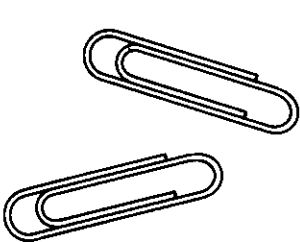
5.

6.

7.

8.

Perfect score: 13 My score: _____



2 paper clips weigh about 1 gram (g).



3 new books like yours weigh about 1 kilogram (kg).

1 gram = 1000 milligrams (mg)
1000 grams = 1 kilogram (kg)

Complete the following.

1. About how many grams do 4 paper clips weigh?

They weigh about _____ grams.
2. A box contains 4000 paper clips. How many kilograms do those paper clips weigh?

They weigh _____ kilograms.
3. One nickel weighs about 5 grams. A roll of 40 nickels would weigh about how many grams?

It would weigh _____ grams.
4. How many kilograms would 6 new books like yours weigh?

They would weigh _____ kilograms.
5. A doctor has 3000 milligrams of medicine. How many grams is that?

That is _____ grams.
6. A dog weighs 17,000 grams. How many kilograms is that?

That is _____ kilograms.

1.	
2.	
3.	
4.	
5.	
6.	

Perfect score: 6 My score: _____

Lesson 9 Units of Weight

NAME _____

$$6 \text{ kg} = \underline{\quad ? \quad} \text{ g}$$

$$1 \text{ kg} = 1000 \text{ g}$$

$$6 \text{ kg} = (6 \times 1000) \text{ g}$$

$$6 \text{ kg} = \underline{6000} \text{ g}$$

$$5000 \text{ mg} = \underline{\quad ? \quad} \text{ g}$$

$$1000 \text{ mg} = 1 \text{ g}$$

$$5000 \text{ mg} = (5000 \div 1000) \text{ g}$$

$$5000 \text{ mg} = \underline{\quad \quad} \text{ g}$$

Complete the following.

a

1. $2 \text{ kg} = \underline{\quad \quad \quad} \text{ g}$

2. $9 \text{ g} = \underline{\quad \quad \quad} \text{ mg}$

3. $2000 \text{ mg} = \underline{\quad \quad \quad} \text{ g}$

4. $3000 \text{ g} = \underline{\quad \quad \quad} \text{ kg}$

b

$6 \text{ g} = \underline{\quad \quad \quad} \text{ mg}$

$9 \text{ kg} = \underline{\quad \quad \quad} \text{ g}$

$7000 \text{ g} = \underline{\quad \quad \quad} \text{ kg}$

$8000 \text{ mg} = \underline{\quad \quad \quad} \text{ g}$

5. A penny weighs about 3 grams. A dime weighs about 2000 milligrams. Which weighs more? How much more?

A weighs about milligrams more.

6. Marta uses a 4-kilogram bowling ball. Her father uses a 7-kilogram bowling ball. How much heavier is her father's bowling ball?

It is kilograms heavier.

7. A loaf of bread weighs 454 grams. How much would 3 loaves of bread weigh?

They would weigh grams.

8. John weighs 34,000 grams. Judy weighs 39 kilograms. Who weighs more? How much more?

 weighs kilograms more.

5.

6.

7.

8.

Perfect score: 14 My score:

CHAPTER 6 TEST

Find the length of each line segment to the nearest centimeter.
Then find the length of each line segment to the nearest millimeter.

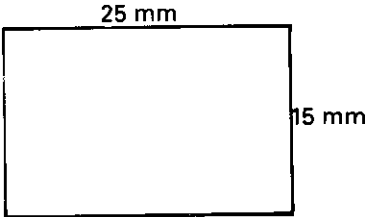
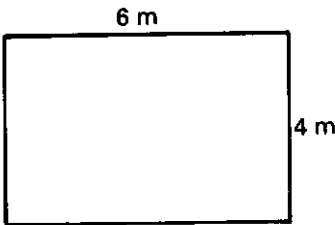
a

b

1. _____ cm _____ mm 
2. _____ cm _____ mm 

Find the perimeter and the area of each rectangle.

3. *perimeter*: _____ meters 4. *perimeter*: _____ millimeters
- area*: _____ square meters *area*: _____ square millimeters



Complete the following.

a

b

5. 5 cm = _____ mm 2000 m = _____ km
6. 700 cm = _____ m 300 mm = _____ cm
7. 6 km = _____ m 3 m = _____ cm
8. 4 kl _____ liters 3000 ml = _____ liters
9. 2 liters = _____ ml 8 kg = _____ g
10. 7 g = _____ mg 5000 g = _____ kg

Perfect score: 20 My score: _____

PRE-TEST—Measurement

NAME _____ Chapter 7

Complete.

a

b

1. 4 feet = _____ inches

4 feet 6 inches = _____ inches

2. 24 feet = _____ yards

2 yards 2 feet = _____ feet

3. 5 yards = _____ feet

1 yard 10 inches = _____ inches

4. 1 mile = _____ feet

8 feet 4 inches = _____ inches

5. 6 cups = _____ pints

3 quarts 1 pint = _____ pints

6. 8 quarts = _____ gallons

4 gallons 2 quarts = _____ quarts

7. 32 ounces = _____ pounds

6 pounds 6 ounces = _____ ounces

Find the perimeter of each figure.

a

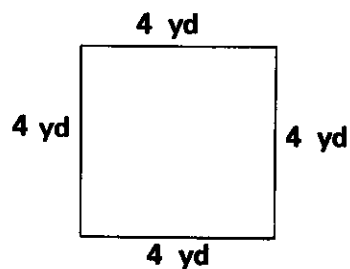
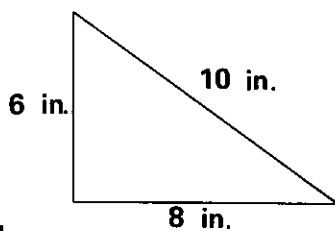
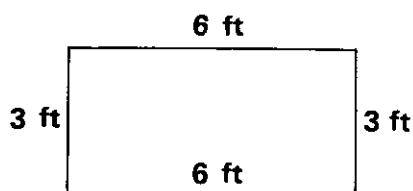
b

c

8. _____ feet

_____ inches

_____ yards

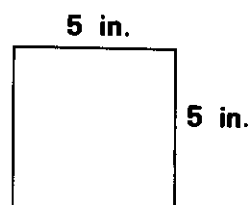
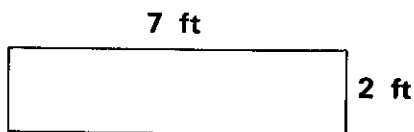
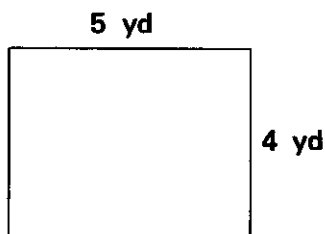


Find the area of each rectangle.

9. _____ square yards

_____ square feet

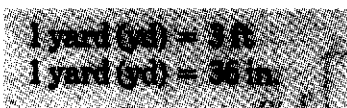
_____ square inches



Perfect score: 20 My score: _____

Lesson 1 Units of Length

NAME _____



24 in. = ? ft
12 in. = 1 ft
24 in. = (24 ÷ 12) ft
24 in. = 2 ft

3 ft 4 in. = ? in.
1 ft = 12 in.
3 ft = (3 × 12) or 36 in.
3 ft 4 in. = 36 in. + 4 in.

3 ft 4 in. = in.

Complete the following.

a

b

- 1. 6 ft = _____ in.
- 2. 2 yd = _____ in.
- 3. 3 mi = _____ ft
- 4. 84 in. = _____ ft
- 5. 180 in. = _____ yd
- 6. 15 ft = _____ yd

- 3 ft 2 in. = _____ in.
- 6 yd 11 in. = _____ in.
- 1 mi 450 ft = _____ ft
- 7 yd 1 ft = _____ ft
- 4 yd 7 in. = _____ in.
- 2 ft 6 in. = _____ in.

7. Becky threw the ball 24 yards. Wally threw the ball 840 inches. How many feet did each person throw the ball? Who threw it farther? How much farther?

Becky threw the ball _____ feet.

Wally threw the ball _____ feet.

_____ threw the ball _____ feet farther.

Perfect score: 16 My score: _____

Lesson 2 Perimeter

NAME _____

4 in.

3 in.

3 in.

4 in.

3

4

3

+4

14

or

3

+4

7

×2

14

perimeter: 14 in.

7 yd

5 yd

3 yd

3 yd

4 yd

5

7

4

3

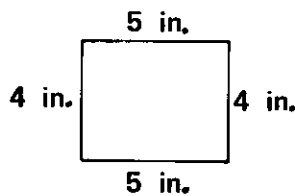
+3

22

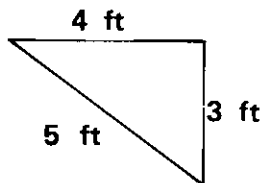
perimeter: 22 yd

Find the perimeter of each figure.

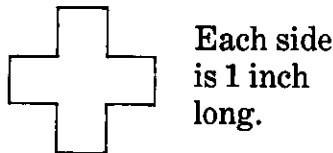
1. _____ inches



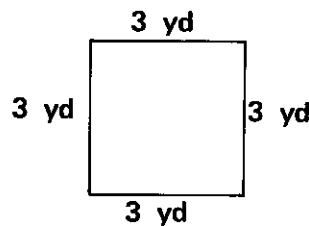
2. _____ feet



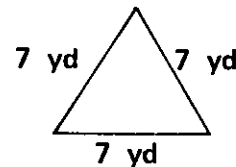
3. _____ inches



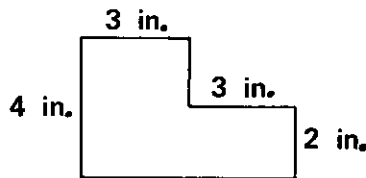
4. _____ yards



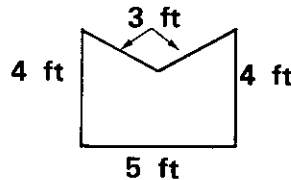
_____ yards



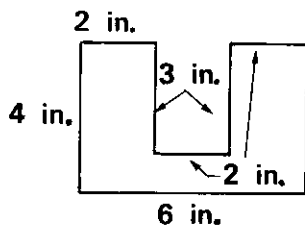
_____ inches



_____ feet



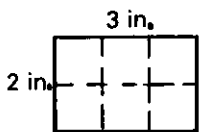
_____ inches



Perfect score: 8 My score: _____

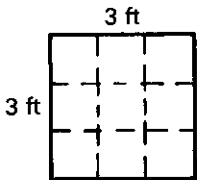
Lesson 3 Area

NAME _____



$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$

area: 6 square inches



$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$$

area: _____ square feet

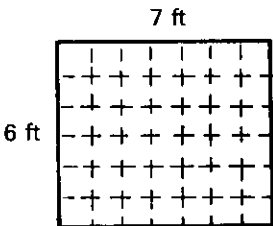
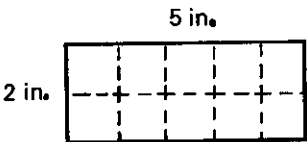
Find the area of each rectangle.

a

b

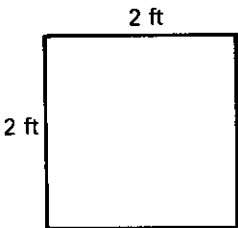
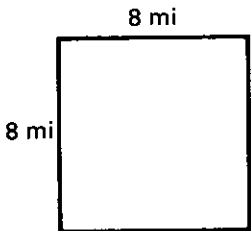
1. _____ square inches

_____ square feet



2. _____ square miles

_____ square feet



	<i>length</i>	<i>width</i>	<i>area</i>
3.	8 ft	5 ft	_____ square feet
4.	12 in.	8 in.	_____ square inches
5.	142 ft	57 ft	_____ square feet
6.	36 yd	12 yd	_____ square yards
7.	18 in.	15 in.	_____ square inches

Perfect score: 9 My score: _____

Problem Solving

Solve each problem.

1. A garden has the shape of a rectangle. It is 24 feet long and 10 feet wide. What is the perimeter of the garden?

The perimeter is _____ feet.

2. A baseball diamond is a square with each side 90 feet long. Find the perimeter and the area of the diamond.

The perimeter is _____ feet.

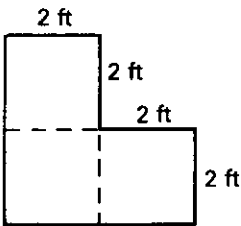
The area is _____ square feet.

3. The square-shaped lot is 125 feet on each side. What is the perimeter of the lot? What is the area?

The perimeter is _____ feet.

The area is _____ square feet.

4. Find the perimeter and the area of the following figure.



The perimeter is _____ feet.

The area is _____ square feet.

5. Use the front cover of this book. Measure its length and its width to the nearest inch. Find the perimeter of the cover. Find the area of the cover.

The length of the cover is _____ inches.

The width of the cover is _____ inches.

The perimeter of the cover is _____ inches.

The area of the cover is _____ square inches.

1.

2.

3.

4.

5.

Lesson 4 Capacity and Weight

NAME _____

1 quart (qt) = 2 cups
1 pint (pt) = 2 cups

1 gallon (gal) = 4 qt
1 pound (lb) = 16 ounces (oz)

$$6 \text{ pt} = \underline{\quad? \quad} \text{ cups}$$

$$1 \text{ pt} = 2 \text{ cups}$$

$$6 \text{ pt} = (6 \times 2) \text{ cups}$$

$$6 \text{ pt} = \underline{12} \text{ cups}$$

$$3 \text{ lb } 4 \text{ oz} = \underline{\quad? \quad} \text{ oz}$$

$$1 \text{ lb} = 16 \text{ oz}$$

$$3 \text{ lb} = (3 \times 16) \text{ oz}$$

$$3 \text{ lb } 4 \text{ oz} = (48 + 4) \text{ oz}$$

$$3 \text{ lb } 4 \text{ oz} = \underline{\hspace{1cm}} \text{ oz}$$

Complete the following.

a

1. $8 \text{ cups} = \underline{\hspace{1cm}} \text{ pt}$

2. $8 \text{ qt} = \underline{\hspace{1cm}} \text{ gal}$

3. $16 \text{ qt} = \underline{\hspace{1cm}} \text{ pt}$

4. $5 \text{ lb} = \underline{\hspace{1cm}} \text{ oz}$

5. $15 \text{ pt} = \underline{\hspace{1cm}} \text{ cups}$

b

1 lb 6 oz = oz

6 lb 2 oz = oz

3 qt 1 pt = pt

6 gal 3 qt qt

7 pt 1 cup = cups

6. Terrance bought 6 pints of milk. He is going to give 1 cup of milk to each person. How many people can he serve?

He can serve people.

7. Mindy bought 6 pints of fruit juice. Sallie bought 1 gallon 1 quart of fruit juice. How many quarts of fruit juice did each person buy? Who bought more? How many quarts more?

Mindy bought quarts.

Sallie bought quarts.

 bought quarts more.

6.

7.

Perfect score: 15 My score:

Problem Solving

Solve each problem.

1. A fruit-drink recipe calls for 16 cups of water. How many pints of water is this? How many quarts?

It is _____ pints of water.

It is _____ quarts of water.

2. Ross counted 7 gallons of milk and 3 quarts of milk in the cooler. How many quarts of milk was this? How many pints of milk was this?

It was _____ quarts of milk.

It was _____ pints of milk.

3. Ann has 12 quarts and 1 pint of fruit drink. How many people can she serve at 1 pint per person? How many people can she serve at 1 cup per person?

She can serve _____ people at 1 pint each.

She can serve _____ people at 1 cup each.

4. Bernice and Charles have 3 pounds 12 ounces of hamburger. How many ounces is that?

That is _____ ounces.

5. How many 4-ounce hamburgers can be made from the meat in problem 4?

_____ 4-ounce hamburgers can be made.

6. How many 3-ounce hamburgers can be made from the meat in problem 4?

_____ 3-ounce hamburgers can be made.

7. How many 6-ounce hamburgers can be made from the meat in problem 4?

_____ 6-ounce hamburgers can be made.

1.

2.

3.

4.

5.

6.

7.

CHAPTER 7 TEST

Complete the following.

a

b

1. 7 qt = _____ pt

2. 18 cups = _____ pt

3. 12 qt = _____ gal

4. 5 gal 2 qt = _____ qt

5. 7 pt 1 cup = _____ cups

6. 3 yd 10 in. = _____ in.

7. 5 ft 11 in. = _____ in.
- 9 ft = _____ in.

36 ft = _____ yd

10 yd = _____ in.

5 qt 1 pt = _____ pt

6 gal 3 qt = _____ qt

7 yd 1 ft = _____ ft

4 yd 2 ft = _____ ft

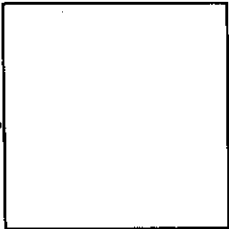
Find the perimeter of each figure below.

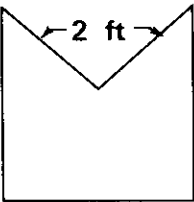
a

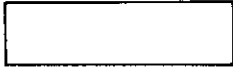
b

c

8.



_____ inches
- 

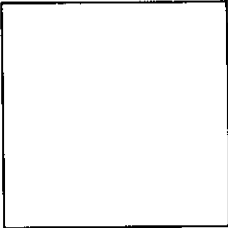
_____ feet
- 

_____ yards

Find the area of each rectangle below.

9.



_____ square feet
- 

_____ square yards
- 

_____ square inches

Perfect score: 20 My score: _____



PRE-TEST—Fractions

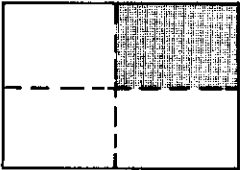
NAME _____

Chapter 8

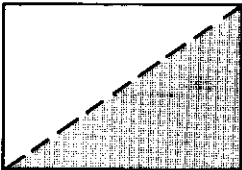
Write the fraction that tells how much of each figure is colored.

1.

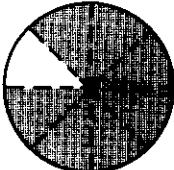
a



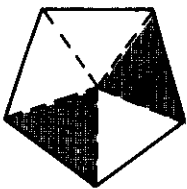
b



c



d



Change each fraction to simplest form.

2.

a

 $\frac{4}{6}$

b

 $\frac{8}{16}$

c

 $\frac{15}{20}$

Rename as mixed numerals.

3.

$\frac{7}{6}$

$\frac{8}{3}$

 $\frac{17}{5}$

Change each mixed numeral to a fraction.

4.

$3\frac{1}{4}$

$6\frac{1}{2}$

 $3\frac{5}{6}$

Change each of the following to simplest form.

5.

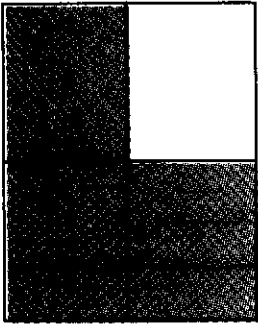
$1\frac{6}{8}$

$\frac{10}{3}$

 $4\frac{5}{2}$

Perfect score: 16 My score: _____

Lesson 1 Fractions



The figure is separated into 4 parts. Each part is the same size.

3 of the 4 parts are colored.

$\frac{3}{4}$ (read *three fourths*) of the figure is colored.

_____ of the 4 parts is not colored.

_____ of the figure is not colored.

$\frac{3}{4}$ and $\frac{1}{4}$ are fractions.

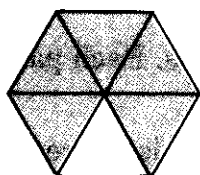
On the first _____ beneath each figure, write the fraction that tells how much of the figure is colored. On the second _____, write the fraction that tells how much of the figure is not colored.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	 _____ _____	 _____ _____	 _____ _____	 _____ _____
2.	 _____ _____	 _____ _____	 _____ _____	 _____ _____
3.	 _____ _____	 _____ _____	 _____ _____	 _____ _____
4.	 _____ _____	 _____ _____	 _____ _____	 _____ _____

Perfect score: 32 My score: _____

Lesson 2 Fractions

NAME _____



$\frac{5}{6}$ of the figure is colored.
 $\frac{5}{6}$ ← numerator
 $\frac{5}{6}$ ← denominator

$\frac{1}{6}$ of the figure is not colored.

The denominator of $\frac{1}{6}$ is _____. The numerator of $\frac{1}{6}$ is _____.

Write a fraction for each of the following.

a

b

- | | | | |
|------------------|-------|----------------------------|-------|
| 1. three fifths | _____ | numerator 2, denominator 3 | _____ |
| 2. four sevenths | _____ | denominator 5, numerator 4 | _____ |
| 3. five eighths | _____ | denominator 4, numerator 3 | _____ |
| 4. one fifth | _____ | numerator 1, denominator 6 | _____ |
| 5. two ninths | _____ | denominator 9, numerator 5 | _____ |

Color each figure as directed.

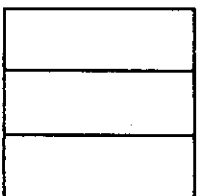
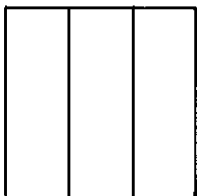
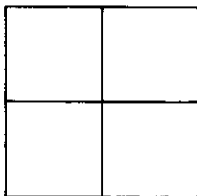
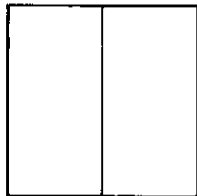
a

b

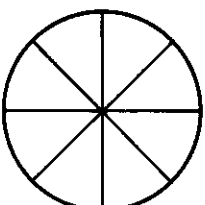
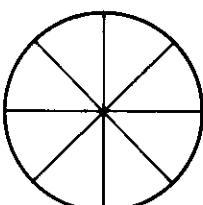
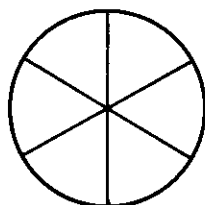
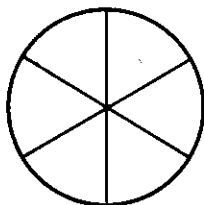
c

d

- | | | | | |
|----|---------------------|---------------------|---------------------|---------------------|
| 6. | color $\frac{1}{2}$ | color $\frac{1}{4}$ | color $\frac{2}{3}$ | color $\frac{1}{3}$ |
|----|---------------------|---------------------|---------------------|---------------------|



- | | | | | |
|----|---------------------|---------------------|---------------------|---------------------|
| 7. | color $\frac{2}{6}$ | color $\frac{1}{3}$ | color $\frac{4}{8}$ | color $\frac{1}{2}$ |
|----|---------------------|---------------------|---------------------|---------------------|



Perfect score: 18 My score: _____

Lesson 3 Fractions in Simplest Form

A fraction is in simplest form when the only whole number that will divide the numerator and the denominator is 1.

$$\frac{12}{18} = \frac{12 \div 6}{18 \div 6}$$
$$= \frac{2}{3}$$

← Divide both the numerator and the denominator by the same number.

$$\frac{12}{18} = \frac{12 \div 2}{18 \div 2}$$
$$= \frac{6}{9}$$
$$= \frac{6 \div 3}{9 \div 3}$$
$$= \frac{2}{3}$$

← This fraction is not in simplest form so, continue dividing the numerator and the denominator until the fraction is in simplest form.

Change each fraction to simplest form.

- | <i>a</i> | <i>b</i> | <i>c</i> |
|--------------------|-----------------|-----------------|
| 1. $\frac{4}{6}$ | $\frac{4}{16}$ | $\frac{12}{15}$ |
| 2. $\frac{12}{32}$ | $\frac{8}{10}$ | $\frac{15}{20}$ |
| 3. $\frac{14}{16}$ | $\frac{6}{8}$ | $\frac{10}{16}$ |
| 4. $\frac{6}{10}$ | $\frac{3}{24}$ | $\frac{8}{16}$ |
| 5. $\frac{14}{21}$ | $\frac{10}{12}$ | $\frac{12}{16}$ |

Perfect score: 15 My score: _____

Fractions in Simplest Form

Change each fraction to simplest form.

<i>a</i>	<i>b</i>	<i>c</i>
1. $\frac{4}{8}$	$\frac{3}{6}$	$\frac{2}{4}$
2. $\frac{5}{10}$	$\frac{3}{15}$	$\frac{4}{20}$
3. $\frac{4}{24}$	$\frac{8}{12}$	$\frac{6}{9}$
4. $\frac{6}{21}$	$\frac{10}{25}$	$\frac{4}{12}$
5. $\frac{12}{30}$	$\frac{12}{28}$	$\frac{16}{20}$
6. $\frac{20}{24}$	$\frac{20}{36}$	$\frac{42}{49}$
7. $\frac{21}{35}$	$\frac{15}{18}$	$\frac{24}{30}$
8. $\frac{16}{24}$	$\frac{15}{35}$	$\frac{24}{32}$

Lesson 4 Mixed Numerals

$\frac{17}{5}$ means $17 \div 5$ or $5 \overline{)17}$.

$3\frac{2}{5}$

$5 \overline{)17}$
 $\underline{15}$
 $2 \rightarrow 2 \div 5 = \frac{2}{5}$

$\frac{17}{5} = 3\frac{2}{5}$

$3\frac{2}{5}$ is a **mixed numeral**. It means $3 + \frac{2}{5}$.

Rename as mixed numerals.

<i>a</i>	<i>b</i>	<i>c</i>
1. $\frac{9}{4}$	$\frac{6}{5}$	$\frac{9}{8}$
2. $\frac{8}{3}$	$\frac{9}{5}$	$\frac{7}{3}$
3. $\frac{7}{4}$	$\frac{29}{6}$	$\frac{14}{3}$
4. $\frac{15}{7}$	$\frac{12}{5}$	$\frac{19}{9}$
5. $\frac{22}{7}$	$\frac{19}{2}$	$\frac{27}{5}$
6. $\frac{35}{8}$	$\frac{43}{7}$	$\frac{55}{6}$

Perfect score: 18 My score: _____

Lesson 5 Renaming Numbers

NAME _____

Study how to change a mixed numeral to a fraction.

$$\begin{array}{l}
 \begin{array}{c} \text{+} \\ \curvearrowright \end{array} 2\frac{1}{4} = \frac{(4 \times 2) + 1}{4} \\
 \begin{array}{c} \text{X} \\ \curvearrowright \end{array} \\
 = \frac{8 + 1}{4} \\
 = \frac{9}{4}
 \end{array}$$

Multiply the whole number by the denominator and add the numerator. Use the same denominator.

$$\begin{array}{l}
 \begin{array}{c} \text{+} \\ \curvearrowright \end{array} 4\frac{2}{3} = \frac{(3 \times 4) + 2}{3} \\
 \begin{array}{c} \text{X} \\ \curvearrowright \end{array} \\
 = \frac{12 + 2}{3} \\
 = \frac{14}{3}
 \end{array}$$

Change each mixed numeral to a fraction.

a

1. $2\frac{1}{3}$

b

$3\frac{1}{2}$

c

$4\frac{3}{4}$

2. $6\frac{4}{5}$

$3\frac{3}{8}$

$2\frac{5}{9}$

3. $2\frac{1}{5}$

$1\frac{2}{7}$

$5\frac{3}{7}$

4. $6\frac{5}{12}$

$7\frac{3}{10}$

$8\frac{6}{15}$

Perfect score: 12 My score: _____

Lesson 6 Mixed Numerals in Simplest Form

A mixed numeral is in simplest form when the fraction is in simplest form and names a number less than 1.

$$\begin{aligned} 5\frac{4}{8} &= 5 + \frac{4}{8} \\ &= 5 + \frac{4 \div 4}{8 \div 4} \\ &= 5 + \frac{1}{2} \\ &= 5\frac{1}{2} \end{aligned}$$

$$\begin{aligned} 1\frac{18}{8} &= 1 + \frac{18}{8} \\ &= 1 + \frac{18 \div 2}{8 \div 2} \\ &= 1 + \frac{9}{4} \\ &= 1 + 2\frac{1}{4} \quad \frac{9}{4} = 9 \div 4 = 2\frac{1}{4} \\ &= 3\frac{1}{4} \end{aligned}$$

Change each mixed numeral to simplest form.

a
1. $3\frac{4}{6}$

b
 $1\frac{4}{8}$

c
 $2\frac{6}{8}$

2. $4\frac{3}{12}$

$2\frac{6}{16}$

$1\frac{10}{12}$

3. $1\frac{7}{5}$

$3\frac{9}{6}$

$2\frac{8}{6}$

4. $1\frac{12}{10}$

$2\frac{15}{10}$

$4\frac{14}{6}$

Perfect score: 12 My score: _____

Lesson 7 Simplest Form

NAME _____

Change each fraction to simplest form.

1. $\frac{a}{\frac{6}{14}}$

$\frac{b}{\frac{12}{27}}$

$\frac{c}{\frac{15}{25}}$

2. $\frac{4}{12}$

$\frac{28}{32}$

$\frac{15}{21}$

Change each of the following to a mixed numeral in simplest form.

3. $\frac{9}{5}$

$\frac{8}{3}$

$\frac{12}{7}$

4. $\frac{12}{8}$

$\frac{16}{6}$

$\frac{25}{15}$

5. $1\frac{8}{10}$

$2\frac{7}{21}$

$3\frac{9}{15}$

6. $4\frac{12}{14}$

$5\frac{8}{12}$

$2\frac{12}{16}$

Perfect score: 18 My score: _____

CHAPTER 8 TEST

NAME _____

Change each fraction to simplest form.

- a*

1. $\frac{4}{8}$
- b*

$\frac{5}{10}$
- c*

$\frac{6}{9}$
- d*

$\frac{3}{6}$

2. $\frac{10}{15}$

$\frac{6}{8}$

$\frac{12}{18}$

$\frac{9}{12}$

Rename as mixed numerals.

3. $\frac{5}{2}$

$\frac{7}{5}$

$\frac{9}{4}$

$\frac{16}{3}$



Change each mixed numeral to a fraction.

4. $1\frac{1}{2}$

$1\frac{7}{8}$

$4\frac{2}{3}$

$5\frac{5}{6}$

Change each of the following to simplest form.

5. $1\frac{8}{10}$

$\frac{18}{8}$

$1\frac{7}{3}$

$5\frac{12}{8}$

Perfect score: 20 My score: _____

PRE-TEST—Multiplication

NAME _____

Chapter 9

Write each answer in simplest form.

1. $\overset{a}{\frac{3}{7}} \times \frac{2}{5}$

$\overset{b}{\frac{3}{4}} \times \frac{7}{8}$

$\overset{c}{\frac{4}{5}} \times \frac{4}{5}$

2. $\frac{2}{3} \times \frac{7}{8}$

$\frac{5}{9} \times \frac{3}{5}$

$\frac{9}{10} \times \frac{5}{12}$

3. $4 \times \frac{2}{3}$

$3 \times \frac{5}{6}$

$\frac{5}{8} \times 10$

4. $3\frac{1}{5} \times 4$

$2\frac{1}{4} \times 8$

$6 \times 1\frac{5}{6}$

5. $2\frac{1}{2} \times 2\frac{1}{3}$

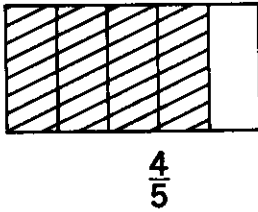
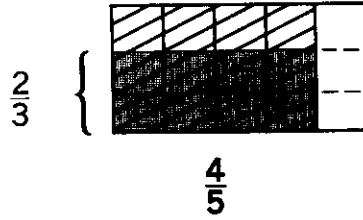
$2\frac{1}{4} \times 1\frac{1}{5}$

$1\frac{1}{8} \times 3\frac{1}{3}$

6

Perfect score: 15 My score: _____

Lesson 1 Multiplication

5 parts in all.4 parts marked  $\frac{4}{5}$ of the figure marked 15 parts in all._____ parts marked _____ of the figure is marked 

$$\frac{2}{3} \text{ of } \frac{4}{5} = \frac{8}{15}$$

Complete the following.

*a*1. $\frac{1}{4}$ $\frac{1}{2}$ of $\frac{1}{4}$ 

$$\frac{1}{2} \text{ of } \frac{1}{4} = \underline{\hspace{2cm}}$$

2. $\frac{1}{2}$ $\frac{1}{3}$ of $\frac{1}{2}$ 

$$\frac{1}{3} \text{ of } \frac{1}{2} = \underline{\hspace{2cm}}$$

3. $\frac{1}{5}$ $\frac{1}{2}$ of $\frac{1}{5}$ 

$$\frac{1}{2} \text{ of } \frac{1}{5} = \underline{\hspace{2cm}}$$

b $\frac{1}{2}$ $\frac{1}{2}$ of $\frac{1}{2}$ 

$$\frac{1}{2} \text{ of } \frac{1}{2} = \underline{\hspace{2cm}}$$

 $\frac{1}{3}$ $\frac{1}{2}$ of $\frac{1}{3}$ 

$$\frac{1}{2} \text{ of } \frac{1}{3} = \underline{\hspace{2cm}}$$

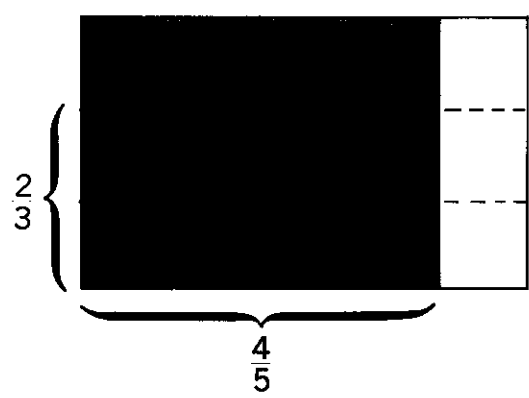
 $\frac{3}{5}$ $\frac{1}{2}$ of $\frac{3}{5}$ 

$$\frac{1}{2} \text{ of } \frac{3}{5} = \underline{\hspace{2cm}}$$

Perfect score: 6 My score: _____

Lesson 2 Multiplication

NAME _____



$\frac{2}{3}$ of $\frac{4}{5}$ means $\frac{2}{3} \times \frac{4}{5}$.

Multiply numerators

$$\frac{2}{3} \times \frac{4}{5} = \frac{\overbrace{2 \times 4}}{\underbrace{3 \times 5}} = \frac{8}{15}$$

Multiply denominators

Multiply as shown.

a

1. $\frac{1}{4} \times \frac{3}{5} = \frac{1 \times 3}{4 \times 5}$
 $= \frac{3}{20}$

b

$\frac{2}{3} \times \frac{1}{5}$

c

$\frac{1}{6} \times \frac{5}{8}$

2. $\frac{3}{7} \times \frac{1}{4}$

$\frac{5}{9} \times \frac{1}{2}$

$\frac{6}{7} \times \frac{2}{5}$

3. $\frac{4}{5} \times \frac{2}{3}$

$\frac{7}{8} \times \frac{1}{6}$

$\frac{1}{5} \times \frac{2}{3}$

4. $\frac{2}{5} \times \frac{1}{7}$

$\frac{5}{6} \times \frac{1}{2}$

$\frac{2}{3} \times \frac{5}{7}$

5. $\frac{2}{3} \times \frac{2}{5}$

$\frac{5}{8} \times \frac{3}{4}$,

$\frac{2}{5} \times \frac{1}{3}$

Perfect score: 14 My score: _____

Lesson 3 Multiplication

$$\begin{array}{lcl}
 \frac{4}{5} \times \frac{1}{2} = \frac{4 \times 1}{5 \times 2} & \leftarrow \text{Multiply the numerators.} \longrightarrow & \frac{3}{10} \times \frac{5}{6} = \frac{3 \times 5}{10 \times 6} \\
 = \frac{4}{10} & \leftarrow \text{Multiply the denominators.} \longrightarrow & = \frac{15}{60} \\
 = \frac{2}{5} & \leftarrow \text{If necessary, change the} & = \frac{1}{4} \\
 & \text{answer to simplest form.} \longrightarrow &
 \end{array}$$

Write each answer in simplest form.

a

1. $\frac{5}{7} \times \frac{1}{4}$

b

$\frac{3}{5} \times \frac{1}{2}$

c

$\frac{7}{8} \times \frac{3}{4}$

2. $\frac{3}{7} \times \frac{2}{5}$

$\frac{1}{4} \times \frac{7}{8}$

$\frac{3}{5} \times \frac{4}{9}$

3. $\frac{4}{7} \times \frac{3}{8}$

$\frac{9}{10} \times \frac{5}{6}$

$\frac{5}{9} \times \frac{6}{10}$

4. $\frac{8}{15} \times \frac{5}{12}$

$\frac{5}{12} \times \frac{16}{25}$

$\frac{4}{9} \times \frac{9}{14}$

5. $\frac{6}{7} \times \frac{2}{3}$

$\frac{7}{8} \times \frac{11}{12}$

$\frac{3}{10} \times \frac{7}{8}$

Perfect score: 15 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. Jeff had $\frac{3}{4}$ yard of string. He used $\frac{2}{3}$ of the string to tie a package. How much string did he use?

He used _____ yard.

2. Julia lives $\frac{7}{8}$ mile from work. She has walked $\frac{4}{5}$ of the way to work. How far has she walked?

She has walked _____ mile.

3. Dorothea bought $\frac{1}{2}$ gallon of milk. She drank $\frac{1}{4}$ of it. How much milk did she drink?

She drank _____ gallon.

4. Stewart bought $\frac{3}{4}$ pound of cheese. He ate $\frac{1}{3}$ of it. How much cheese did he eat?

He ate _____ pound.

5. Five sixths of a room is now painted. Carlos did $\frac{2}{5}$ of the painting. How much of the room did he paint?

He painted _____ of the room.

6. The lawn is $\frac{1}{2}$ mowed. Melinda did $\frac{2}{3}$ of the mowing. How much of the lawn did she mow?

She mowed _____ of the lawn.

7. A lawn mower uses $\frac{3}{4}$ gallon of fuel each hour. How much fuel will it use in $\frac{1}{2}$ hour?

It will use _____ gallon.

1.	
2.	
3.	
4.	
5.	
6.	
7.	

Lesson 4 Multiplication

$$4 \times \frac{2}{5} = \frac{4}{1} \times \frac{2}{5}$$

$$= \frac{4 \times 2}{1 \times 5}$$

$$= \frac{8}{5}$$



$$= 1\frac{3}{5}$$

Name the whole number
as a fraction.

Multiply the fractions.

Change the answer to
simplest form.

$$\frac{5}{8} \times 6 = \frac{5}{8} \times \frac{6}{1}$$

$$= \frac{5 \times 6}{8 \times 1}$$

$$= \frac{30}{8}$$



$$= 3\frac{3}{4}$$

Write each answer in simplest form.

a

1. $5 \times \frac{3}{7}$

b

$9 \times \frac{7}{8}$

c

$7 \times \frac{5}{6}$

2. $\frac{2}{3} \times 5$

$\frac{7}{8} \times 9$

$\frac{4}{5} \times 12$

3. $8 \times \frac{3}{4}$

$9 \times \frac{5}{6}$

$4 \times \frac{4}{5}$

4. $\frac{7}{8} \times 12$

$\frac{3}{5} \times 10$

$\frac{5}{6} \times 14$

Perfect score: 12 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. A boy weighs 60 pounds on Earth. He would weigh only $\frac{1}{6}$ of that on the moon. How much would he weigh on the moon?

He would weigh _____ pounds.

2. A woman weighs 120 pounds on Earth. How much would she weigh on the moon?

She would weigh _____ pounds.

3. A dog weighs 20 pounds on Earth. It would weigh only $\frac{2}{5}$ of that on Mars. How much would the dog weigh on Mars?

It would weigh _____ pounds.

4. How much would the boy in problem 1 weigh on Mars?

He would weigh _____ pounds.

5. How much would the woman in problem 2 weigh on Mars?

She would weigh _____ pounds.

6. A rock weighs 10 pounds on Earth. It would weigh only $\frac{7}{8}$ of that on Venus. How much would it weigh on Venus?

It would weigh _____ pounds.

7. How much would the dog in problem 3 weigh on Venus?

It would weigh _____ pounds.

1.

2.

3.

4.

5.

6.

7.

Perfect score: 7 My score: _____

Lesson 5 Multiplication

$$\begin{aligned}
 2\frac{1}{6} \times 8 &= \frac{13}{6} \times \frac{8}{1} \\
 &= \frac{13 \times 8}{6 \times 1} \\
 &= \frac{104}{6} \\
 &= 17\frac{1}{3}
 \end{aligned}$$

Change the mixed numeral to a fraction.
Name the whole number as a fraction.

Multiply.

Change the answer
to simplest form.

Write each answer in simplest form.

a

1. $4\frac{1}{2} \times 5$

b

$1\frac{3}{4} \times 7$

c

$3 \times 2\frac{1}{8}$

2. $2\frac{2}{3} \times 6$

$1\frac{7}{8} \times 6$

$4 \times 2\frac{3}{8}$

3. $2\frac{4}{5} \times 7$

$10 \times 2\frac{4}{15}$

$8\frac{1}{7} \times 4$

4. $8 \times 2\frac{5}{6}$

$3\frac{2}{7} \times 14$

$3\frac{1}{3} \times 7$

Perfect score: 12 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. Some square tiles measure $3\frac{1}{2}$ inches on each side. Seven tiles are placed in a row. How long is the row of tiles?

The row would be _____ inches long.

2. Suppose that 10 tiles like those in problem 1 were placed in a row. How long would that row of tiles be?

It would be _____ inches long.

3. There are 5 boxes and each one weighs $1\frac{3}{4}$ pounds. How many pounds do all the boxes weigh?

All the boxes weigh _____ pounds.

4. Each board is $1\frac{5}{8}$ inches thick. Six boards are stacked on top of each other. How high is the stack?

The stack of boards is _____ inches high.

5. Suppose it takes $2\frac{5}{6}$ hours to make an orbit around the moon. How long would it take to make 9 orbits?

It would take _____ hours.

6. There are a dozen boxes of nails in each carton. Each box of nails weighs $2\frac{1}{2}$ pounds. How much would a carton of nails weigh?

One carton would weigh _____ pounds.

7. In problem 6, suppose there are only 6 boxes left in the carton. How much would that carton weigh?

It would weigh _____ pounds.

8. Each straight piece of road-racing track is $5\frac{3}{8}$ inches long. What would the total length of track be if Jill lays 10 pieces of straight track end-to-end?

The total length would be _____ inches.

1.

2.

3.

4.

5.

6.

7.

8.

Lesson 6 Multiplication

$$\begin{aligned}
 1\frac{1}{2} \times 2\frac{1}{4} &= \frac{3}{2} \times \frac{9}{4} \\
 &= \frac{3 \times 9}{2 \times 4} \\
 &= \frac{27}{8} \\
 &= 3\frac{3}{8}
 \end{aligned}$$

Change both mixed numerals to fractions.

Multiply.

Change to simplest form.

Write each answer in simplest form.

a

1. $3\frac{1}{8} \times 1\frac{2}{3}$

b

$1\frac{1}{6} \times 2\frac{1}{2}$

c

$1\frac{4}{5} \times 1\frac{3}{4}$

2. $2\frac{2}{3} \times 4\frac{1}{5}$

$2\frac{1}{2} \times 1\frac{1}{7}$

$1\frac{3}{5} \times 1\frac{1}{6}$

3. $1\frac{3}{5} \times 3\frac{3}{4}$

$2\frac{1}{4} \times 3\frac{1}{3}$

$4\frac{1}{2} \times 2\frac{2}{3}$

4. $2\frac{2}{5} \times 2\frac{1}{4}$

$1\frac{3}{8} \times 1\frac{3}{7}$

$2\frac{4}{5} \times 2\frac{6}{7}$

Perfect score: 12 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. A rectangle is $4\frac{1}{2}$ feet long and $1\frac{3}{4}$ feet wide. Find the area of the rectangle.

The area is _____ square feet.

2. A rectangular picture is $1\frac{3}{4}$ inches long and $3\frac{1}{2}$ inches wide. Find the area of the picture.

The area is _____ square inches.

3. A rectangular window is $2\frac{1}{2}$ feet long and $4\frac{1}{2}$ feet wide. Find the area of the window.

The area is _____ square feet.

4. Each side of a square floor is $10\frac{1}{2}$ feet long. Find the area of that floor.

The area is _____ square feet.

5. A boat was traveling $12\frac{1}{2}$ miles each hour. At that rate, how many miles would it travel in $1\frac{1}{2}$ hours?

It would travel _____ miles.

6. How many miles would the boat in problem 5 travel in 4 hours?

It would travel _____ miles.

7. How many miles would the boat in problem 5 travel in $5\frac{1}{4}$ hours?

It would travel _____ miles.

Lesson 7 Multiplication

Write each answer in simplest form.

$$1. \quad \overset{a}{\frac{3}{4} \times \frac{1}{5}}$$

$$\overset{b}{\frac{2}{7} \times \frac{3}{5}}$$

$$\overset{c}{\frac{2}{3} \times \frac{1}{5}}$$

$$\overset{d}{\frac{5}{12} \times \frac{7}{8}}$$

$$2. \quad \frac{6}{7} \times \frac{1}{3}$$

$$\frac{4}{7} \times \frac{5}{6}$$

$$\frac{3}{8} \times \frac{2}{9}$$

$$\frac{3}{4} \times \frac{5}{12}$$

$$3. \quad 6 \times \frac{2}{5}$$

$$\frac{2}{7} \times 4$$

$$8 \times \frac{3}{4}$$

$$\frac{3}{8} \times 6$$

$$4. \quad 6\frac{2}{5} \times 5$$

$$6\frac{7}{8} \times 16$$

$$4 \times 5\frac{5}{6}$$

$$8 \times 2\frac{1}{12}$$

$$5. \quad 3\frac{1}{8} \times 3\frac{1}{5}$$

$$4\frac{2}{3} \times 1\frac{4}{5}$$

$$2\frac{1}{2} \times 4\frac{2}{3}$$

$$1\frac{3}{5} \times 1\frac{1}{4}$$

Perfect score: 20

My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. Zoe spent $\frac{2}{3}$ hour doing homework. She spent $\frac{3}{4}$ of this time reading. How long did she spend reading?

She spent _____ hour reading.

2. A rectangular picture is $8\frac{1}{2}$ inches long and 10 inches wide. Find the area of the picture.

The area is _____ square inches.

3. In one hour a machine can produce $\frac{9}{10}$ pound of silver. Suppose the machine breaks down after $\frac{1}{3}$ hour. How many pounds of silver are processed?

_____ pound of silver is processed.

4. A certain book is $\frac{7}{8}$ inch thick. Ten of these books are placed on top of each other. How high is the stack?

The stack of books will be _____ inches high .

5. A large box of Lotsa-clean detergent weighs $6\frac{3}{4}$ pounds. There are 12 of these boxes in a carton. How much would a carton weigh?

A carton would weigh _____ pounds.

6. There are $4\frac{1}{2}$ pounds of dog food in each bag. How many pounds of dog food would be in 3 bags?

There would be _____ pounds in 3 bags.

7. Basil gained 3 pounds in six months. Floyd gained $3\frac{1}{3}$ times as many pounds as Basil. How many pounds did Floyd gain?

Floyd gained _____ pounds.

Write each answer in simplest form.

<i>a</i>	<i>b</i>	<i>c</i>
1. $\frac{7}{8} \times \frac{5}{6}$	$\frac{4}{5} \times \frac{3}{7}$	$\frac{2}{3} \times \frac{1}{5}$
2. $\frac{2}{3} \times \frac{5}{6}$	$\frac{8}{9} \times \frac{3}{8}$	$\frac{2}{5} \times \frac{15}{16}$
3. $8 \times \frac{3}{5}$	$9 \times \frac{5}{6}$	$\frac{3}{4} \times 20$
4. $2\frac{2}{5} \times 4$	$4\frac{1}{4} \times 6$	$3 \times 1\frac{2}{9}$
5. $\frac{2}{3} \times 1\frac{4}{5}$	$7\frac{1}{2} \times \frac{4}{5}$	$6\frac{1}{4} \times \frac{2}{5}$
6. $1\frac{3}{5} \times 1\frac{1}{3}$	$2\frac{1}{2} \times 3\frac{1}{3}$	$2\frac{1}{6} \times 1\frac{1}{8}$

Perfect score: 18 My score: _____

PRE-TEST—Addition

NAME _____

Chapter 10

Write each answer in simplest form.

1.
$$\begin{array}{r} a \\ \frac{1}{6} \\ + \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} b \\ \frac{3}{8} \\ + \frac{1}{8} \\ \hline \end{array}$$

$$\begin{array}{r} c \\ \frac{5}{9} \\ + \frac{2}{9} \\ \hline \end{array}$$

$$\begin{array}{r} d \\ \frac{7}{12} \\ + \frac{5}{12} \\ \hline \end{array}$$

2.
$$\begin{array}{r} \frac{5}{6} \\ + \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{8} \\ + \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{10} \\ + \frac{2}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{5} \\ + \frac{1}{4} \\ \hline \end{array}$$

3.
$$\begin{array}{r} 7\frac{1}{2} \\ + 3\frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 6\frac{7}{10} \\ + 1\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{1}{3} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{1}{3} \\ + 2\frac{1}{2} \\ \hline \end{array}$$

4.
$$\begin{array}{r} 1\frac{5}{8} \\ + 4\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{3}{4} \\ + \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{12} \\ + \frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{12} \\ + 6\frac{3}{4} \\ \hline \end{array}$$

5.
$$\begin{array}{r} \frac{2}{3} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 9\frac{3}{8} \\ + \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{4}{5} \\ + 1\frac{3}{10} \\ \hline \end{array}$$

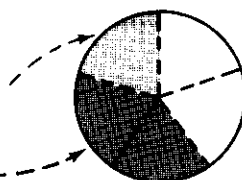
$$\begin{array}{r} 4\frac{2}{3} \\ + 5\frac{5}{6} \\ \hline \end{array}$$

Perfect score: 20 My score: _____

$\frac{1}{5}$ of the figure is blue.

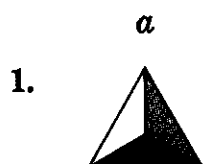
$\frac{2}{5}$ of the figure is gray.

$\frac{3}{5}$ of the figure is colored.



$$\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$$

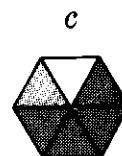
Complete the following.



$$\frac{1}{3} + \frac{1}{3} =$$



$$\frac{2}{4} + \frac{1}{4} =$$



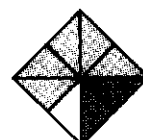
$$\frac{1}{6} + \frac{4}{6} =$$



$$\frac{2}{6} + \frac{3}{6} =$$



$$\frac{2}{7} + \frac{2}{7} =$$



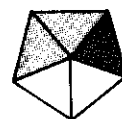
$$\frac{5}{8} + \frac{2}{8} =$$



$$\frac{1}{6} + \frac{0}{6} =$$



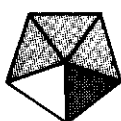
$$\frac{2}{9} + \frac{5}{9} =$$



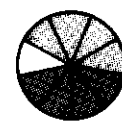
$$\frac{2}{5} + \frac{1}{5} =$$



$$\frac{3}{8} + \frac{2}{8} =$$



$$\frac{3}{5} + \frac{1}{5} =$$



$$\frac{4}{9} + \frac{4}{9} =$$

Perfect score: 12 My score: _____

Lesson 2 Addition

NAME _____

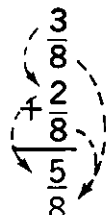
Study how to add two fractions that have the same denominator.

Add the
numerators.

$$\frac{3}{8} + \frac{2}{8} = \frac{3+2}{8} = \frac{5}{8}$$

Use the same
denominator.

Add the
numerators.



Use the same
denominator.

Add.

1.	$\frac{1}{3}$	$\frac{2}{7}$	$\frac{5}{8}$	$\frac{1}{4}$	$\frac{2}{5}$
	$+\frac{1}{3}$	$+\frac{4}{7}$	$+\frac{2}{8}$	$+\frac{2}{4}$	$+\frac{2}{5}$

2.	$\frac{4}{9}$	$\frac{4}{8}$	$\frac{1}{6}$	$\frac{3}{7}$	$\frac{2}{10}$
	$+\frac{3}{9}$	$+\frac{1}{8}$	$+\frac{4}{6}$	$+\frac{3}{7}$	$+\frac{5}{10}$

3.	$\frac{2}{5}$	$\frac{3}{6}$	$\frac{2}{8}$	$\frac{2}{7}$	$\frac{2}{9}$
	$+\frac{1}{5}$	$+\frac{2}{6}$	$+\frac{1}{8}$	$+\frac{2}{7}$	$+\frac{2}{9}$

4.	$\frac{1}{9}$	$\frac{1}{7}$	$\frac{6}{8}$	$\frac{1}{5}$	$\frac{3}{7}$
	$+\frac{4}{9}$	$+\frac{4}{7}$	$+\frac{1}{8}$	$+\frac{1}{5}$	$+\frac{1}{7}$

Perfect score: 20 My score: _____

$$\begin{array}{r} \frac{7}{10} \\ + \frac{9}{10} \\ \hline \frac{16}{10} = 1\frac{3}{5} \end{array}$$

Add.
Change to
simplest form.

$$\begin{array}{r} \frac{1}{12} \\ + \frac{11}{12} \\ \hline \frac{12}{12} = 1 \end{array}$$

Add. Write each answer in simplest form.

a	b	c	d
1. $\frac{2}{3}$	$\frac{4}{5}$	$\frac{2}{9}$	$\frac{1}{4}$
$+\frac{2}{3}$	$+\frac{3}{5}$	$+\frac{1}{9}$	$+\frac{1}{4}$
2. $\frac{1}{8}$	$\frac{3}{10}$	$\frac{3}{4}$	$\frac{7}{12}$
$+\frac{5}{8}$	$+\frac{9}{10}$	$+\frac{3}{4}$	$+\frac{11}{12}$
3. $\frac{1}{2}$	$\frac{6}{7}$	$\frac{7}{8}$	$\frac{5}{6}$
$+\frac{1}{2}$	$+\frac{5}{7}$	$+\frac{7}{8}$	$+\frac{1}{6}$
4. $\frac{3}{5}$	$\frac{5}{12}$	$\frac{8}{9}$	$\frac{7}{10}$
$+\frac{3}{5}$	$+\frac{7}{12}$	$+\frac{5}{9}$	$+\frac{9}{10}$

Perfect score: 16 My score: _____

Lesson 4 Addition

NAME _____

$$\begin{array}{r} 4\frac{5}{8} \\ + 2\frac{1}{8} \\ \hline 6\frac{6}{8} = 6\frac{3}{4} \end{array}$$

Add the fractions.

Add the whole numbers.

Change to simplest form.

$$\begin{array}{r} 6\frac{7}{10} \\ + 2\frac{9}{10} \\ \hline 8\frac{16}{10} = 9\frac{3}{5} \end{array}$$

Add. Write each answer in simplest form.

a

$$\begin{array}{r} 1. \quad 1\frac{2}{5} \\ + 2\frac{1}{5} \\ \hline \end{array}$$

b

$$\begin{array}{r} 4\frac{1}{6} \\ + 2\frac{1}{6} \\ \hline \end{array}$$

c

$$\begin{array}{r} 3\frac{1}{10} \\ + 2\frac{3}{10} \\ \hline \end{array}$$

d

$$\begin{array}{r} 19\frac{3}{8} \\ + 7\frac{1}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5\frac{3}{4} \\ + 1\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 6\frac{2}{3} \\ + 1\frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 2\frac{9}{10} \\ + 1\frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 26\frac{4}{5} \\ + 13\frac{3}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 4\frac{1}{2} \\ + 2\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{5}{6} \\ + 4\frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 8\frac{7}{12} \\ + 4\frac{11}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 36\frac{7}{8} \\ + 27\frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 7\frac{2}{3} \\ + 6\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 9\frac{2}{5} \\ + 4\frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 11\frac{3}{10} \\ + 6\frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 58\frac{7}{9} \\ + 31\frac{5}{9} \\ \hline \end{array}$$

Perfect score: 16 My score: _____

Lesson 5 Renaming Fractions

NAME _____

By separating the figure in different ways, you can write different fractions to tell how much is orange.



$\frac{2}{3}$ of the figure is orange.



$\frac{4}{6}$ of the figure is orange.

$$\frac{2}{3} = \frac{4}{6}$$

$$\frac{2}{3} = \frac{2}{3}$$

$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2}$$

$$\frac{2}{3} = \frac{4}{6}$$

Multiply the numerator and the denominator by the same number.

Choose 2 so the new denominator is 6.

$$\frac{2}{3} = \frac{2}{3}$$

$$\frac{2}{3} = \frac{2 \times 3}{3 \times 3}$$

$$\frac{2}{3} = \frac{6}{9}$$

Choose 3 so the new denominator is 9.

Rename.

1. $\frac{2}{3} = \frac{a}{12}$

$\frac{3}{4} = \frac{b}{8}$

$\frac{5}{6} = \frac{c}{12}$

2. $\frac{1}{2} = \frac{1}{10}$

$\frac{2}{5} = \frac{2}{10}$

$\frac{3}{5} = \frac{3}{15}$

3. $\frac{3}{4} = \frac{3}{12}$

$\frac{3}{8} = \frac{3}{16}$

$\frac{4}{5} = \frac{4}{20}$

Perfect score: 9 My score: _____

Renaming Numbers

$$\begin{aligned} \frac{7}{8} &= \frac{\text{7 squares}}{32} \\ \frac{7}{8} &= \frac{7 \times 4}{8 \times 4} \\ \frac{7}{8} &= \frac{28}{32} \end{aligned}$$

$$\begin{aligned} 7 &= \frac{\text{7 squares}}{3} \\ 7 &= \frac{7 \times 3}{1 \times 3} \\ 7 &= \frac{21}{3} \end{aligned}$$

Name the whole number as a fraction whose denominator is 1. Then rename.

Rename.

1. $\frac{1}{2} = \frac{\text{a}}{4}$

$\frac{1}{3} = \frac{\text{b}}{9}$

$3 = \frac{\text{c}}{12}$

2. $6 = \frac{\text{2 squares}}{2}$

$\frac{4}{5} = \frac{\text{4 squares}}{10}$

$7 = \frac{\text{7 squares}}{5}$

3. $\frac{1}{4} = \frac{\text{1 square}}{8}$

$\frac{2}{3} = \frac{\text{2 squares}}{15}$

$4 = \frac{\text{4 squares}}{3}$

4. $\frac{1}{3} = \frac{\text{1 square}}{6}$

$\frac{1}{2} = \frac{\text{1 square}}{8}$

$6 = \frac{\text{6 squares}}{6}$

When adding fractions that have different denominators, rename the fractions so they have the same denominator.

$$\begin{array}{r} \frac{1}{3} \\ + \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{6} \\ + \frac{3}{6} \\ \hline \frac{5}{6} \end{array}$$

The denominators are 2 and 3. Since $2 \times 3 = 6$, rename each fraction with a denominator of 6.

Then add the fractions.

$$\begin{array}{r} \frac{1}{2} \times \frac{3}{3} \\ + \frac{2}{3} \times \frac{2}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{6} \\ + \frac{4}{6} \\ \hline \frac{7}{6} = 1\frac{1}{6} \end{array}$$

Change $\frac{7}{6}$ to a mixed numeral in simplest form.

Write each answer in simplest form.

a	b	c	d
1. $\frac{2}{5}$	$\frac{1}{4}$	$\frac{2}{5}$	$\frac{1}{2}$
$+ \frac{1}{2}$	$+ \frac{2}{3}$	$+ \frac{1}{3}$	$+ \frac{1}{5}$
2. $\frac{5}{6}$	$\frac{2}{3}$	$\frac{1}{3}$	$\frac{5}{8}$
$+ \frac{3}{5}$	$+ \frac{1}{5}$	$+ \frac{3}{10}$	$+ \frac{2}{3}$
3. $\frac{3}{4}$	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{7}{8}$
$+ \frac{1}{3}$	$+ \frac{4}{5}$	$+ \frac{3}{4}$	$+ \frac{1}{3}$

Perfect score: 12 My score: _____

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Addition

$$\begin{array}{r} \frac{2}{5} \\ + \frac{3}{10} \\ \hline \end{array} \xrightarrow{\times 2} \begin{array}{r} \frac{4}{10} \\ + \frac{3}{10} \\ \hline \frac{7}{10} \end{array}$$

The denominators are 5 and 10. Since $2 \times 5 = 10$, rename only $\frac{2}{5}$ with a denominator of 10.

Then add the fractions.

$$\begin{array}{r} \frac{7}{10} \\ + \frac{2}{5} \\ \hline \end{array} \xrightarrow{\times 2} \begin{array}{r} \frac{7}{10} \\ + \frac{4}{10} \\ \hline \frac{11}{10} = 1\frac{1}{10} \end{array}$$

Change $\frac{11}{10}$ to simplest form.

Write each answer in simplest form.

1. $\begin{array}{r} a \\ \frac{3}{4} \\ + \frac{1}{8} \\ \hline \end{array}$

$\begin{array}{r} b \\ \frac{2}{3} \\ + \frac{5}{6} \\ \hline \end{array}$

$\begin{array}{r} c \\ \frac{1}{2} \\ + \frac{3}{10} \\ \hline \end{array}$

$\begin{array}{r} d \\ \frac{5}{12} \\ + \frac{2}{3} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{5}{16} \\ + \frac{3}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{6} \\ + \frac{1}{2} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{8} \\ + \frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{9}{10} \\ + \frac{3}{5} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{3}{4} \\ + \frac{9}{16} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{12} \\ + \frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + \frac{1}{3} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{2} \\ + \frac{7}{8} \\ \hline \end{array}$

Perfect score: 12 My score: _____

Lesson 7 Addition

NAME _____

$$\begin{array}{r} \frac{1}{6} \\ + \frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{24} \\ + \frac{15}{24} \\ \hline \frac{19}{24} \end{array}$$

The denominators are 6 and 8.
Since $4 \times 6 = 24$ and $3 \times 8 = 24$,
rename each fraction with a
denominator of 24.
Then add the fractions.

$$\begin{array}{r} \frac{5}{6} \\ \times 4 \\ \hline \frac{20}{24} \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ \times 4 \\ \hline \frac{20}{24} \\ + \frac{9}{24} \\ \hline \frac{29}{24} = 1 \frac{5}{24} \end{array}$$

Change $\frac{29}{24}$ to
simplest form.

Write each answer in simplest form.

1. $\begin{array}{r} \frac{1}{9} \\ + \frac{1}{6} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{6} \\ + \frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + \frac{1}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{10} \\ + \frac{1}{12} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{1}{6} \\ + \frac{3}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{3}{4} \\ + \frac{1}{6} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + \frac{5}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{3}{10} \\ + \frac{3}{8} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{3}{10} \\ + \frac{5}{12} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + \frac{4}{9} \\ \hline \end{array}$

$\begin{array}{r} \frac{3}{10} \\ + \frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + \frac{3}{10} \\ \hline \end{array}$

4. $\begin{array}{r} \frac{7}{10} \\ + \frac{5}{6} \\ \hline \end{array}$

$\begin{array}{r} \frac{11}{12} \\ + \frac{7}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{9}{10} \\ + \frac{7}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{4} \\ + \frac{5}{6} \\ \hline \end{array}$

Perfect score: 16 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. To make green paint, Andrea mixed $\frac{7}{8}$ quart of yellow paint and $\frac{1}{2}$ quart of blue paint. How much green paint did she make?

She made _____ quarts of green paint.

2. Sean painted $\frac{1}{3}$ of a fence. Sandra painted $\frac{1}{4}$ of the fence. How much of the fence did they paint?

They painted _____ of the fence.

3. Maureen bought $\frac{3}{4}$ pound of cheese. Chang bought $\frac{1}{2}$ pound of cheese. How much cheese did they buy?

They bought _____ pounds of cheese.

4. A recipe calls for $\frac{2}{3}$ cup of milk and $\frac{3}{4}$ cup of water. How much milk and water are to be used?

_____ cups of milk and water are to be used.

5. A board $\frac{1}{2}$ inch thick is glued to a board $\frac{3}{8}$ inch thick. What is the combined thickness?

The combined thickness is _____ inch.

6. A book $\frac{3}{4}$ inch thick is placed on a book $\frac{13}{16}$ inch thick. What is the combined thickness of the books?

The combined thickness is _____ inches.

7. Yesterday $\frac{3}{10}$ inch of rain fell. Today $\frac{3}{4}$ inch of rain fell. How much rain fell during the two days?

_____ inches of rain fell during the two days.

1.

2.

3.

4.

5.

6.

7.

$3\frac{1}{4}$

$+2\frac{5}{6}$

$\hline$

$3\frac{3}{12}$

$+2\frac{10}{12}$

$\hline$

$5\frac{13}{12}$

$=6\frac{1}{12}$

$4\frac{1}{2}$

$+3\frac{2}{3}$

$\hline$

$4\frac{3}{6}$

$+3\frac{4}{6}$

$\hline$

$7\frac{7}{6}$

$=8\frac{1}{6}$

Rename the fractions so they have the same denominator.

Change to simplest form.

Write each answer in simplest form.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	$3\frac{5}{6}$ $+4\frac{5}{8}$ $\hline$	$5\frac{2}{3}$ $+1\frac{5}{6}$ $\hline$	$6\frac{5}{6}$ $+3\frac{1}{4}$ $\hline$	$\frac{1}{2}$ $+2\frac{3}{4}$ $\hline$
2.	$1\frac{5}{6}$ $+4\frac{1}{3}$ $\hline$	$5\frac{1}{2}$ $+2\frac{3}{4}$ $\hline$	$3\frac{2}{3}$ $+ \frac{3}{4}$ $\hline$	$2\frac{3}{5}$ $+1\frac{1}{2}$ $\hline$
3.	$4\frac{3}{8}$ $+6\frac{1}{4}$ $\hline$	$5\frac{1}{3}$ $+ \frac{2}{5}$ $\hline$	$4\frac{2}{5}$ $+2\frac{3}{10}$ $\hline$	$2\frac{1}{8}$ $+5\frac{3}{4}$ $\hline$
4.	$3\frac{1}{2}$ $+3\frac{1}{2}$ $\hline$	$1\frac{3}{8}$ $+2\frac{1}{2}$ $\hline$	$9\frac{3}{4}$ $+6\frac{1}{2}$ $\hline$	$12\frac{2}{3}$ $+1\frac{5}{6}$ $\hline$

Perfect score: 16

My score: _____

Problem Solving



Solve each problem.

1. Jennifer spent $1\frac{1}{2}$ hours working on Ms. Thomkin's car on Monday. She spent $2\frac{3}{4}$ more hours on Tuesday to finish the tune-up. How many hours in all did she work on Ms. Thomkin's car?

She worked _____ hours in all.

2. Myrna worked $7\frac{1}{4}$ hours Monday. She worked $9\frac{3}{4}$ hours Tuesday. How many hours did she work in all on Monday and Tuesday?

She worked _____ hours in all on Monday and Tuesday.

3. The auto repair shop is $1\frac{3}{10}$ miles from the bank. The bank is $3\frac{3}{5}$ miles from Melinda's home. After she left her car at the shop, Melinda walked to the bank. Then she walked home. How far did Melinda walk in all?

Melinda walked _____ miles.

4. It took $2\frac{5}{6}$ hours to fix Mrs. Sax's car. It took $3\frac{1}{2}$ hours to fix Mr. Wong's car. How long did it take to fix both cars?

It took _____ hours to fix both cars.

1.

2.

3.

4.

Perfect score: 4 My score: _____

Lesson 9 Addition

NAME _____

Write each answer in simplest form.

$$\begin{array}{r} a \\ 1. \quad \frac{1}{12} \\ + \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} b \\ 5\frac{5}{6} \\ + 3\frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} c \\ 4\frac{1}{3} \\ + 2\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} d \\ \frac{9}{16} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 1\frac{1}{4} \\ + 6\frac{3}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{7} \\ + \frac{9}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{3}{4} \\ + \frac{9}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{18} \\ + \frac{7}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \frac{5}{7} \\ + \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{2}{5} \\ + 2\frac{8}{15} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{12} \\ + 5\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{9}{14} \\ + \frac{2}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 2\frac{1}{10} \\ + 1\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{12} \\ + \frac{5}{9} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ + \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 8\frac{1}{3} \\ + 3\frac{2}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad \frac{2}{5} \\ + \frac{3}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{9} \\ + 1\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{2}{5} \\ + 3\frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 7\frac{3}{4} \\ + 9\frac{5}{6} \\ \hline \end{array}$$

Perfect score: 20

My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. Clyde weighs $71\frac{1}{4}$ pounds. His sister weighs $10\frac{3}{4}$ pounds more than that. How much does his sister weigh?

His sister weighs _____ pounds.

2. Arlene spent $2\frac{1}{2}$ hours planting part of a garden. It took her $1\frac{3}{4}$ hours to finish planting the garden. How long did it take to plant the garden?

It took _____ hours.

3. A basket weighs $1\frac{1}{8}$ pounds when empty. Jake put $10\frac{1}{2}$ pounds of apples in the basket. How much do the basket and apples weigh?

The basket and apples weigh _____ pounds.

4. June's normal body temperature is $98\frac{6}{10}^{\circ}\text{F}$. The doctor said her temperature is $2\frac{1}{2}$ degrees above normal. What is her temperature?

Her temperature is _____ $^{\circ}\text{F}$.

5. Ned jumped a distance of $4\frac{1}{3}$ feet. Phil jumped $1\frac{1}{4}$ feet farther than Ned. How far did Phil jump?

Phil jumped _____ feet.

6. A board $1\frac{3}{8}$ inches thick is glued to a board $1\frac{3}{4}$ inches thick. What is the combined thickness of the boards?

The combined thickness is _____ inches.

1.	2.
3.	4.
5.	6.

Lesson 10 Addition

NAME _____

Write each answer in simplest form.

$$\begin{array}{r} a \\ 1. \quad \frac{1}{9} \\ + \frac{4}{9} \\ \hline \end{array}$$

$$\begin{array}{r} b \\ \frac{2}{7} \\ + \frac{3}{7} \\ \hline \end{array}$$

$$\begin{array}{r} c \\ \frac{8}{9} \\ + \frac{5}{9} \\ \hline \end{array}$$

$$\begin{array}{r} d \\ \frac{11}{16} \\ + \frac{7}{16} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad \frac{2}{3} \\ + \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{5} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{2} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ + \frac{1}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \frac{7}{8} \\ + \frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{12} \\ + \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{5} \\ + \frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{8} \\ + \frac{5}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 2\frac{2}{5} \\ + \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 2\frac{1}{9} \\ + \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 7\frac{5}{8} \\ + \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{7}{12} \\ + 1\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad \frac{1}{5} \\ + \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{4} \\ + \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 1\frac{2}{3} \\ + 1\frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{11}{12} \\ + 2\frac{5}{6} \\ \hline \end{array}$$

Perfect score: 20 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. Jack lives $\frac{7}{8}$ mile from the stadium and $\frac{3}{8}$ mile from the school. He walked home from school and then to the stadium. How far did he walk?

Jack walked _____ miles.

2. Peggy read $\frac{5}{6}$ hour before dinner. After dinner she read $\frac{2}{5}$ hour. How long did she read?

Peggy read _____ hours in all.

3. The Clements family drank $\frac{3}{4}$ gallon of milk for dinner. There was $\frac{1}{2}$ gallon left. How much milk was there before dinner?

There was _____ gallon of milk.

4. Gary rides the bus $1\frac{3}{10}$ miles every day. Glen rides $\frac{3}{10}$ mile farther than Gary. How far does Glen ride?

Glen rides _____ miles every day.

5. June is $4\frac{3}{4}$ feet tall. Her father is $1\frac{1}{2}$ feet taller than that. How tall is June's father?

He is _____ feet tall.

6. To make pale blue paint, Lynn mixed $2\frac{1}{4}$ gallons of blue paint and $3\frac{3}{4}$ gallons of white paint. How much pale blue paint did she make?

She made _____ gallons of pale blue paint.

7. Last year Becky was $49\frac{1}{2}$ inches tall. Since then she has grown $1\frac{7}{8}$ inches. How tall is she now?

She is now _____ inches tall.

1.

2.

3.

4.

5.

6.

7.

Perfect score: 7 My score: _____

CHAPTER 10 TEST

NAME _____

Write each answer in simplest form.

1. $\begin{array}{r} a \\ \frac{3}{10} \\ + \frac{1}{10} \\ \hline \end{array}$

$\begin{array}{r} b \\ \frac{5}{6} \\ + \frac{1}{6} \\ \hline \end{array}$

$\begin{array}{r} c \\ \frac{7}{8} \\ + \frac{5}{8} \\ \hline \end{array}$

$\begin{array}{r} d \\ \frac{4}{7} \\ + \frac{1}{7} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{5}{8} \\ + \frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{3}{10} \\ + \frac{3}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{2} \\ + \frac{4}{5} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + \frac{3}{4} \\ \hline \end{array}$

3. $\begin{array}{r} 5\frac{3}{10} \\ + 1\frac{1}{3} \\ \hline \end{array}$

$\begin{array}{r} 4\frac{2}{9} \\ + 2\frac{2}{3} \\ \hline \end{array}$

$\begin{array}{r} \frac{5}{6} \\ + 3\frac{1}{12} \\ \hline \end{array}$

$\begin{array}{r} 6\frac{5}{12} \\ + \frac{1}{3} \\ \hline \end{array}$

4. $\begin{array}{r} 1\frac{3}{4} \\ + 4\frac{7}{10} \\ \hline \end{array}$

$\begin{array}{r} 5\frac{1}{3} \\ + \frac{4}{5} \\ \hline \end{array}$

$\begin{array}{r} 2\frac{3}{4} \\ + 6\frac{15}{16} \\ \hline \end{array}$

$\begin{array}{r} 7\frac{7}{10} \\ + 8\frac{4}{5} \\ \hline \end{array}$

5. $\begin{array}{r} 7\frac{1}{5} \\ + \frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} 9\frac{9}{10} \\ + \frac{7}{12} \\ \hline \end{array}$

$\begin{array}{r} 42\frac{5}{6} \\ + 5\frac{2}{3} \\ \hline \end{array}$

$\begin{array}{r} 54\frac{1}{2} \\ + 21\frac{4}{5} \\ \hline \end{array}$

10

Perfect score: 20 My score: _____

PRE-TEST—Subtraction

NAME _____

Chapter 11

Write each answer in simplest form.

1.
$$\begin{array}{r} a \\ \frac{7}{8} \\ -\frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} b \\ \frac{8}{9} \\ -\frac{2}{9} \\ \hline \end{array}$$

$$\begin{array}{r} c \\ \frac{5}{6} \\ -\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} d \\ \frac{11}{12} \\ -\frac{3}{12} \\ \hline \end{array}$$

2.
$$\begin{array}{r} \frac{5\frac{4}{5}}{5} \\ -\frac{2\frac{1}{5}}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4\frac{5}{9}}{9} \\ -\frac{3\frac{2}{9}}{9} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{6\frac{4}{7}}{7} \\ -\frac{1\frac{6}{7}}{7} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3\frac{3}{8}}{8} \\ -\frac{7}{8} \\ \hline \end{array}$$

3.
$$\begin{array}{r} \frac{5}{6} \\ -\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{3} \\ -\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{8}{9} \\ -\frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{8} \\ -\frac{3}{4} \\ \hline \end{array}$$

4.
$$\begin{array}{r} \frac{7}{10} \\ -\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{8} \\ -\frac{3}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{9}{10} \\ -\frac{2}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ -\frac{7}{12} \\ \hline \end{array}$$

5.
$$\begin{array}{r} \frac{4\frac{5}{6}}{6} \\ -\frac{2\frac{1}{3}}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3\frac{7}{8}}{8} \\ -\frac{1\frac{2}{3}}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2\frac{1}{10}}{10} \\ -\frac{1\frac{4}{5}}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2\frac{1}{5}}{5} \\ -\frac{2}{3} \\ \hline \end{array}$$

Perfect score: 20 My score: _____

Lesson 1 Subtraction

NAME _____

Study how to subtract when fractions have the same denominator.

Subtract the numerators.

$$\frac{7}{8} - \frac{5}{8} = \frac{7-5}{8} = \frac{2}{8} = \frac{1}{4}$$

Use the same denominator.

Change to simplest form.

Subtract the numerators.

$$\frac{7}{8} - \frac{5}{8} = \frac{2}{8} = \frac{1}{4}$$

Use the same denominator.

Change to simplest form.

Write each answer in simplest form.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} \frac{5}{9} \\ - \frac{4}{9} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{5} \\ - \frac{1}{5} \\ \hline \end{array}$	$\begin{array}{r} \frac{8}{9} \\ - \frac{4}{9} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{4} \\ - \frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} \frac{5}{6} \\ - \frac{1}{6} \\ \hline \end{array}$
2.	$\begin{array}{r} \frac{6}{7} \\ - \frac{4}{7} \\ \hline \end{array}$	$\begin{array}{r} \frac{5}{8} \\ - \frac{3}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ - \frac{3}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{2}{5} \\ - \frac{1}{5} \\ \hline \end{array}$	$\begin{array}{r} \frac{5}{9} \\ - \frac{1}{9} \\ \hline \end{array}$
3.	$\begin{array}{r} \frac{5}{7} \\ - \frac{2}{7} \\ \hline \end{array}$	$\begin{array}{r} \frac{8}{9} \\ - \frac{1}{9} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{8} \\ - \frac{3}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{12} \\ - \frac{5}{12} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ - \frac{7}{10} \\ \hline \end{array}$
4.	$\begin{array}{r} \frac{4}{5} \\ - \frac{2}{5} \\ \hline \end{array}$	$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{3} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{10} \\ - \frac{3}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{9} \\ - \frac{4}{9} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{8} \\ - \frac{1}{8} \\ \hline \end{array}$

Perfect score: 20 My score: _____

Lesson 2 Subtraction

NAME _____

Rename the whole number as a mixed numeral so
the denominator is the same as that of the fraction.

$$\begin{array}{r} 2 \longrightarrow 1\frac{4}{4} \\ -\frac{3}{4} \longrightarrow -\frac{3}{4} \\ \hline 1\frac{1}{4} \end{array}$$

$2 = 1 + 1$
 $= 1 + \frac{4}{4}$
 $= 1\frac{4}{4}$

$$\begin{array}{r} 5 \longrightarrow 4\frac{8}{8} \\ -\frac{7}{8} \longrightarrow -\frac{7}{8} \\ \hline 4\frac{1}{8} \end{array}$$

$5 = 4 + 1$
 $= 4 + \frac{8}{8}$
 $= 4\frac{8}{8}$

Write each answer in simplest form.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. 2	3	6	5
$-\frac{1}{4}$	$-\frac{2}{3}$	$-\frac{1}{5}$	$-\frac{1}{3}$

2. 4	5	4	6
$-\frac{3}{4}$	$-\frac{2}{5}$	$-\frac{2}{5}$	$-\frac{5}{6}$

3. 1	2	1	2
$-\frac{1}{2}$	$-\frac{7}{8}$	$-\frac{1}{8}$	$-\frac{3}{10}$

Perfect score: 12 My score: _____

Lesson 3 Subtraction

NAME _____

$\frac{1}{4}$ is less than $\frac{3}{4}$. So
rename $7\frac{1}{4}$ as shown so
you can subtract the
fractions.

$$\begin{array}{r} 7\frac{1}{4} \rightarrow 6\frac{5}{4} \\ -1\frac{3}{4} \rightarrow -1\frac{3}{4} \\ \hline 5\frac{2}{4} = 5\frac{1}{2} \end{array}$$

Change to simplest form.

$\frac{1}{3}$ is less than $\frac{2}{3}$. So
rename $3\frac{1}{3}$ as shown so
you can subtract the
fractions.

$$\begin{array}{r} 3\frac{1}{3} \rightarrow 2\frac{4}{3} \\ -2\frac{2}{3} \rightarrow -2\frac{2}{3} \\ \hline 2\frac{2}{3} \end{array}$$

Write each answer in simplest form.

	a	b	c	d
1.	$5\frac{8}{9}$	$4\frac{6}{7}$	$8\frac{9}{10}$	$6\frac{3}{8}$
	$-2\frac{6}{9}$	$-2\frac{1}{7}$	$-3\frac{4}{10}$	$-2\frac{1}{8}$

2.	$5\frac{1}{3}$	$7\frac{2}{5}$	$8\frac{3}{8}$	$6\frac{1}{9}$
	$-1\frac{2}{3}$	$-1\frac{4}{5}$	$-2\frac{5}{8}$	$-2\frac{6}{9}$

3.	$5\frac{3}{12}$	$4\frac{5}{6}$	$3\frac{2}{5}$	$7\frac{2}{3}$
	$-2\frac{11}{12}$	$-2\frac{2}{6}$	$-1\frac{4}{5}$	$-6\frac{2}{3}$

Perfect score: 12 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. A board is 8 feet long. Hank said that this board is $2\frac{1}{2}$ feet too long for the job. How long a board does Hank need?

He needs a board _____ feet long.

2. Sue says it will take $6\frac{1}{6}$ hours to travel to her grandparents' home. She has been traveling $3\frac{5}{6}$ hours. How much longer will it be before she gets there?

It will be _____ hours longer.

3. The stakes in Don's croquet set are 2 feet long. He drove one stake $\frac{3}{4}$ foot into the ground. How much of the stake is above the ground?

_____ feet are above the ground.

4. An envelope is 7 inches wide. A sheet of paper is $6\frac{1}{2}$ inches wide. How much wider than the paper is the envelope?

It is _____ inch wider.

5. This year Reola spends $5\frac{1}{4}$ hours in school each day. Last year she spent $4\frac{3}{4}$ hours in school each day. How many more hours does she spend in school each day this year than last year?

She spends _____ hour more in school each day this year than last year.

6. A wire is $4\frac{7}{12}$ feet long. Suppose $\frac{11}{12}$ foot of wire is used. How much wire would be left?

_____ feet of wire would be left.

1.

2.

3.

4.

5.

6.

Lesson 4 Subtraction

NAME _____

When subtracting fractions that have different denominators, rename the fractions so they have the same denominator.

$$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{4} \\ \hline \end{array} = \frac{8}{12} - \frac{3}{12} = \frac{5}{12}$$

Since $3 \times 4 = 12$, rename each fraction with a denominator of 12.

$$\begin{array}{r} \frac{5}{6} \\ - \frac{1}{2} \\ \hline \end{array} \xrightarrow{\times \frac{3}{3}} \begin{array}{r} \frac{5}{6} \\ - \frac{3}{6} \\ \hline \end{array} = \frac{2}{6} = \frac{1}{3}$$

Since $2 \times 3 = 6$, rename only $\frac{1}{2}$ with a denominator of 6.

Write each answer in simplest form.

a

$$1. \quad \begin{array}{r} \frac{3}{5} \\ - \frac{1}{3} \\ \hline \end{array}$$

b

$$\begin{array}{r} \frac{5}{6} \\ - \frac{2}{5} \\ \hline \end{array}$$

c

$$\begin{array}{r} \frac{7}{8} \\ - \frac{1}{2} \\ \hline \end{array}$$

d

$$\begin{array}{r} \frac{2}{3} \\ - \frac{4}{9} \\ \hline \end{array}$$

$$2. \quad \begin{array}{r} \frac{5}{6} \\ - \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{12} \\ - \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{5} \\ - \frac{3}{10} \\ \hline \end{array}$$

$$3. \quad \begin{array}{r} \frac{9}{10} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ - \frac{3}{7} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{4} \\ - \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{11}{12} \\ - \frac{1}{6} \\ \hline \end{array}$$

Perfect score: 12 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. Phillip jogged $\frac{5}{6}$ mile. He walked $\frac{1}{2}$ mile. How much farther did he jog than he walked?

He jogged _____ mile farther than he walked.

2. Eddie and Johnnie have painted $\frac{2}{3}$ of a room. Eddie painted $\frac{1}{2}$ of the room. How much of the room did Johnnie paint?

Johnnie painted _____ of the room.

3. Millie and Joan have $\frac{5}{6}$ of a room painted. Joan painted $\frac{1}{5}$ of the room. How much of the room did Millie paint?

Millie painted _____ of the room.

4. Ardith had $\frac{3}{4}$ dozen eggs. She used $\frac{7}{12}$ dozen for breakfast. How many dozen did she have left?

She has _____ dozen eggs left.

5. A rock weighs $\frac{9}{16}$ pound. Suppose $\frac{1}{4}$ pound is chipped away. How much would the remaining rock weigh?

The remaining part would weigh _____ pound.

6. It takes Barbara $\frac{5}{8}$ hour to get to work. In doing so, she rides the train $\frac{2}{3}$ hour. She walks the remaining time. How much time does she spend walking to work?

She spends _____ hour walking to work.

7. Mr. Anthony and Mr. Androtti completed $\frac{3}{4}$ of a job. Mr. Androtti completed $\frac{2}{9}$ of the job. What part of the job did Mr. Anthony complete?

Mr. Anthony completed _____ of the job.

1.	
2.	
3.	
4.	
5.	
6.	
7.	

Perfect score: 7 My score: _____

Lesson 5 Subtraction

$$\begin{array}{r} \frac{3}{4} \longrightarrow \frac{15}{20} \\ -\frac{3}{5} \longrightarrow -\frac{12}{20} \\ \hline \frac{3}{20} \end{array}$$

$$\begin{array}{r} \frac{9}{10} \longrightarrow \frac{27}{30} \\ -\frac{11}{15} \longrightarrow -\frac{22}{30} \\ \hline \frac{5}{30} = \frac{1}{6} \end{array}$$

Write each answer in simplest form.

1. $\begin{array}{r} a \\ \frac{5}{6} \\ -\frac{3}{8} \\ \hline \end{array}$

$\begin{array}{r} b \\ \frac{3}{4} \\ -\frac{1}{6} \\ \hline \end{array}$

$\begin{array}{r} c \\ \frac{7}{8} \\ -\frac{3}{10} \\ \hline \end{array}$

$\begin{array}{r} d \\ \frac{5}{6} \\ -\frac{2}{9} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{9}{10} \\ -\frac{3}{5} \\ \hline \end{array}$

$\begin{array}{r} \frac{7}{8} \\ -\frac{1}{6} \\ \hline \end{array}$

$\begin{array}{r} \frac{2}{3} \\ -\frac{1}{5} \\ \hline \end{array}$

$\begin{array}{r} \frac{8}{9} \\ -\frac{5}{6} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{3}{4} \\ -\frac{5}{12} \\ \hline \end{array}$

$\begin{array}{r} \frac{7}{12} \\ -\frac{1}{4} \\ \hline \end{array}$

$\begin{array}{r} \frac{7}{8} \\ -\frac{1}{3} \\ \hline \end{array}$

$\begin{array}{r} \frac{3}{10} \\ -\frac{1}{4} \\ \hline \end{array}$

4. $\begin{array}{r} \frac{2}{3} \\ -\frac{4}{9} \\ \hline \end{array}$

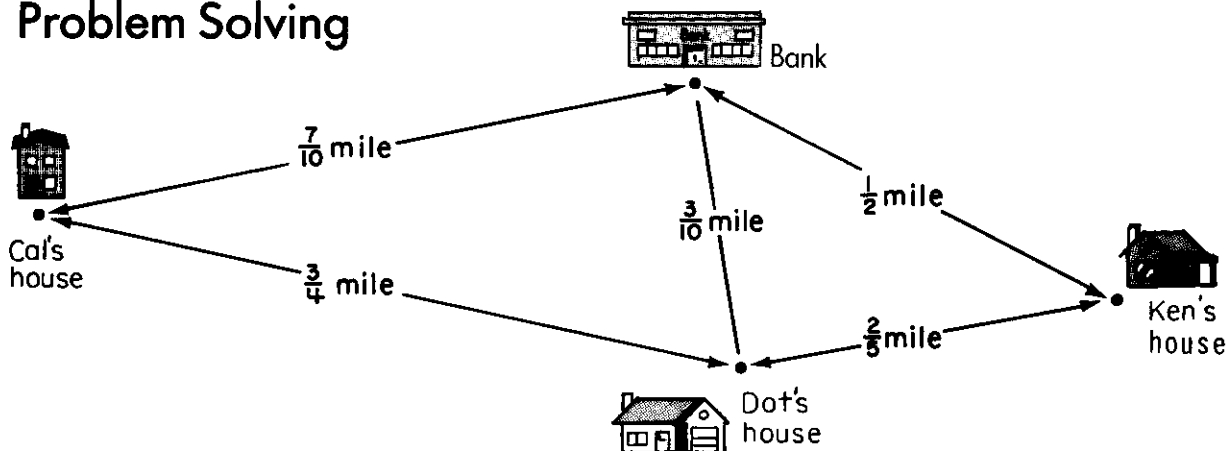
$\begin{array}{r} \frac{11}{12} \\ -\frac{3}{8} \\ \hline \end{array}$

$\begin{array}{r} \frac{1}{4} \\ -\frac{1}{12} \\ \hline \end{array}$

$\begin{array}{r} \frac{2}{3} \\ -\frac{7}{12} \\ \hline \end{array}$

Perfect score: 16 My score: _____

Problem Solving



Solve. Write each answer in simplest form.

1. Who lives farther from the bank, Cal or Dot? How much farther?

_____ lives _____ mile farther.

2. Who lives farther from the bank, Ken or Cal? How much farther?

_____ lives _____ mile farther.

3. How much farther is it from Dot's house to Cal's house than from Dot's house to the bank?

It is _____ mile farther.

4. How much farther is it from Dot's house to Ken's house than from Dot's house to the bank?

It is _____ mile farther.

5. Cal walked from his house to Dot's house. Ken walked from his house to Dot's house. Who walked farther? How much farther?

_____ walked _____ mile farther.

1.	
2.	3.
4.	5.

Lesson 6 Subtraction

Rename so the fractions have the same denominator.

Rename $7\frac{3}{12}$ so you can subtract.

$$\begin{array}{r} 7\frac{1}{4} \longrightarrow 7\frac{3}{12} \longrightarrow 6\frac{15}{12} \\ -3\frac{2}{3} \longrightarrow -3\frac{8}{12} \longrightarrow -3\frac{8}{12} \\ \hline 3\frac{7}{12} \end{array}$$

$$\begin{array}{r} 7\frac{1}{4} = 6 + 1 + \frac{1}{4} \\ = 6 + \frac{3}{3} + \frac{1}{4} \\ = 6 + \frac{15}{12} + \frac{1}{4} \\ = 6 + \frac{15}{12} + \frac{3}{12} \\ = 6\frac{18}{12} \end{array}$$

Write each answer in simplest form.

a

$$1. \quad \begin{array}{r} 5\frac{1}{3} \\ -3\frac{3}{4} \\ \hline \end{array}$$

b

$$\begin{array}{r} 7\frac{3}{5} \\ -4\frac{7}{10} \\ \hline \end{array}$$

c

$$\begin{array}{r} 6\frac{1}{6} \\ -1\frac{3}{8} \\ \hline \end{array}$$

d

$$\begin{array}{r} 5\frac{4}{9} \\ -2\frac{1}{3} \\ \hline \end{array}$$

$$2. \quad \begin{array}{r} 4\frac{3}{8} \\ -2\frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{5}{6} \\ -2\frac{1}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 6\frac{4}{7} \\ -5\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 6\frac{3}{5} \\ -2\frac{3}{10} \\ \hline \end{array}$$

$$3. \quad \begin{array}{r} 5\frac{7}{8} \\ -1\frac{3}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{1}{9} \\ -\frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 2\frac{2}{3} \\ -1\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 1\frac{3}{8} \\ -\frac{9}{10} \\ \hline \end{array}$$

$$4. \quad \begin{array}{r} 4\frac{2}{9} \\ -\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 6\frac{4}{5} \\ -5\frac{3}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{7}{12} \\ -1\frac{9}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 2\frac{1}{8} \\ -\frac{5}{12} \\ \hline \end{array}$$

Perfect score: 16 My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. One fish weighed $1\frac{1}{2}$ pounds. Another weighed $\frac{3}{4}$ pound. How much more did the heavier fish weigh?

It weighed _____ pound more.

2. Mrs. Tanner bought $2\frac{1}{2}$ gallons of paint. She used $1\frac{2}{3}$ gallons of paint on the garage. How much paint did she have left?

She had _____ gallon left.

3. Lorena has two boxes that weigh a total of $4\frac{1}{2}$ pounds. One box weighs $1\frac{7}{10}$ pounds. How much does the other box weigh?

It weighs _____ pounds.

4. Allen practiced the guitar $1\frac{1}{4}$ hours today. He practiced $\frac{2}{3}$ hour before lunch. How long did he practice after lunch?

He practiced _____ hour after lunch.

5. Karen ran a race in $9\frac{3}{10}$ seconds. Curt ran the race in $7\frac{4}{5}$ seconds. How much longer did it take Karen to run the race?

It took _____ seconds longer.

6. Fido weighs $2\frac{5}{16}$ pounds. Spot weighs $4\frac{7}{8}$ pounds. How much more than Fido does Spot weigh?

Spot weighs _____ pounds more.

Perfect score: 6 My score: _____

Lesson 7 Subtraction

Write each answer in simplest form.

$$\begin{array}{r} a \\ 1. \quad \frac{7}{9} \\ - \frac{4}{9} \\ \hline \end{array}$$

$$\begin{array}{r} b \\ \frac{7}{8} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} c \\ \frac{7}{8} \\ - \frac{3}{16} \\ \hline \end{array}$$

$$\begin{array}{r} d \\ \frac{11}{12} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad \frac{4}{5} \\ - \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{10} \\ - \frac{6}{10} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{9}{10} \\ - \frac{2}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{11}{12} \\ - \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \frac{5}{12} \\ - \frac{3}{12} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{8} \\ - \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{8} \\ - \frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 4\frac{7}{10} \\ - 1\frac{2}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{5}{12} \\ - 1\frac{1}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 8\frac{3}{10} \\ - 5\frac{9}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{3}{8} \\ - 3\frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 1\frac{1}{4} \\ - \frac{3}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{6}{7} \\ - 2\frac{3}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 1\frac{1}{3} \\ - \frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 2\frac{4}{5} \\ - \frac{9}{10} \\ \hline \end{array}$$

Perfect score: 20

My score: _____

Problem Solving

Solve. Write each answer in simplest form.

1. A pail filled with water weighs $9\frac{1}{4}$ pounds. The empty pail weighs $\frac{3}{4}$ pound. How much does the water weigh?

The water weighs _____ pounds.

2. A board is $4\frac{5}{8}$ inches long. We need a piece $2\frac{7}{8}$ inches long. How much of the board needs to be cut off?

_____ inches need to be cut off.

3. John and Mary are reading the same book. John has read $\frac{4}{5}$ of the book and Mary has read $\frac{2}{3}$ of the book. How much more of the book has John read than Mary?

John has read _____ more of the book.

4. A recipe calls for $3\frac{1}{2}$ cups of flour and $1\frac{3}{4}$ cups of sugar. How many more cups of flour than sugar are called for by the recipe?

_____ cups more of flour are called for.

5. Judy worked $7\frac{1}{2}$ hours. Harry worked $5\frac{3}{4}$ hours. How much longer than Harry did Judy work?

She worked _____ hours longer.

6. It took Vera $2\frac{2}{3}$ hours to read 2 books. She read one book in $\frac{5}{6}$ hour. How long did it take her to read the other one?

It took _____ hours to read the other book.

7. Mr. Wakefield used $8\frac{1}{4}$ gallons of water to fill 2 tanks. He put $3\frac{7}{8}$ gallons in one tank. How much water did he put in the other tank?

He put _____ gallons in the other tank.

1.

2.

3.

4.

5.

6.

7.

Perfect score: 7 My score: _____

Lesson 8 Subtraction

Write each answer in simplest form.

$$\begin{array}{r} a \\ 1. \quad \frac{7}{9} \\ - \frac{2}{9} \\ \hline \end{array}$$

$$\begin{array}{r} b \\ \frac{5}{7} \\ - \frac{1}{7} \\ \hline \end{array}$$

$$\begin{array}{r} c \\ \frac{5}{8} \\ - \frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} d \\ \frac{7}{10} \\ - \frac{1}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 3\frac{5}{6} \\ - 2\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{5}{9} \\ - 3\frac{2}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{1}{4} \\ - 1\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 1\frac{4}{15} \\ - \frac{7}{15} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \frac{3}{4} \\ - \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{4}{5} \\ - \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{4} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{9} \\ - \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \frac{7}{8} \\ - \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{5}{6} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{3}{4} \\ - \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} \frac{7}{10} \\ - \frac{1}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 3\frac{7}{8} \\ - 2\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{7}{10} \\ - 1\frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{5}{12} \\ - 3\frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 6\frac{2}{9} \\ - \frac{11}{12} \\ \hline \end{array}$$

Perfect score: 20 My score: _____

Problem Solving

<i>Animal</i>	<i>Weight</i>
dog	$4\frac{1}{2}$ lbs
cat	$2\frac{2}{3}$ lbs
rabbit	$1\frac{3}{4}$ lbs



Solve. Write each answer in simplest form.

1. How much more does the dog weigh than the cat?

The dog weighs _____ pounds more than the cat.

2. How much more does the dog weigh than the rabbit?

The dog weighs _____ pounds more than the rabbit.

3. How much more does the cat weigh than the rabbit?

The cat weighs _____ pound more than the rabbit.

4. How much do the dog and the cat weigh together?

Together, the dog and the cat weigh _____ pounds.

1.	2.
3.	4.

Perfect score: 4 My score: _____

CHAPTER 11 TEST

NAME _____

Write each answer in simplest form.

1. a

$$\begin{array}{r} \frac{9}{10} \\ -\frac{7}{10} \\ \hline \end{array}$$

b

$$\begin{array}{r} \frac{4}{5} \\ -\frac{2}{3} \\ \hline \end{array}$$

c

$$\begin{array}{r} \frac{3}{4} \\ -\frac{5}{8} \\ \hline \end{array}$$

d

$$\begin{array}{r} \frac{8}{9} \\ -\frac{2}{9} \\ \hline \end{array}$$

2. $\frac{5}{6}$

$$\begin{array}{r} \frac{5}{6} \\ -\frac{1}{2} \\ \hline \end{array}$$

$\frac{1}{2}$

$$\begin{array}{r} \frac{1}{2} \\ -\frac{3}{8} \\ \hline \end{array}$$

$\frac{11}{12}$

$$\begin{array}{r} \frac{11}{12} \\ -\frac{3}{12} \\ \hline \end{array}$$

$\frac{1}{2}$

$$\begin{array}{r} \frac{1}{2} \\ -\frac{5}{12} \\ \hline \end{array}$$

3. $\frac{3}{4}$

$$\begin{array}{r} \frac{3}{4} \\ -\frac{3}{8} \\ \hline \end{array}$$

$\frac{5}{6}$

$$\begin{array}{r} \frac{5}{6} \\ -\frac{1}{9} \\ \hline \end{array}$$

$\frac{7}{8}$

$$\begin{array}{r} \frac{7}{8} \\ -\frac{1}{4} \\ \hline \end{array}$$

$\frac{2}{3}$

$$\begin{array}{r} \frac{2}{3} \\ -\frac{1}{2} \\ \hline \end{array}$$

4. $5\frac{7}{8}$

$$\begin{array}{r} 5\frac{7}{8} \\ -2\frac{3}{8} \\ \hline \end{array}$$

$4\frac{2}{5}$

$$\begin{array}{r} 4\frac{2}{5} \\ -2\frac{3}{10} \\ \hline \end{array}$$

$6\frac{1}{2}$

$$\begin{array}{r} 6\frac{1}{2} \\ -1\frac{1}{3} \\ \hline \end{array}$$

$3\frac{1}{3}$

$$\begin{array}{r} 3\frac{1}{3} \\ -1\frac{5}{6} \\ \hline \end{array}$$

5. $3\frac{11}{12}$

$$\begin{array}{r} 3\frac{11}{12} \\ -1\frac{5}{6} \\ \hline \end{array}$$

$5\frac{5}{8}$

$$\begin{array}{r} 5\frac{5}{8} \\ -2\frac{3}{4} \\ \hline \end{array}$$

$2\frac{1}{9}$

$$\begin{array}{r} 2\frac{1}{9} \\ -\frac{7}{9} \\ \hline \end{array}$$

$1\frac{2}{5}$

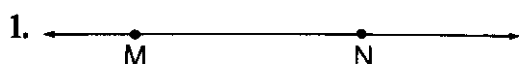
$$\begin{array}{r} 1\frac{2}{5} \\ -\frac{1}{2} \\ \hline \end{array}$$

Perfect score: 20 My score: _____

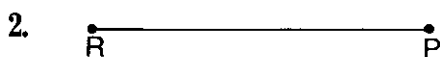
PRE-TEST—Geometry

NAME _____ Chapter 12

Circle the correct name for each figure.

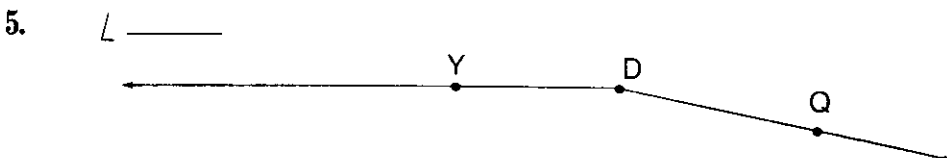
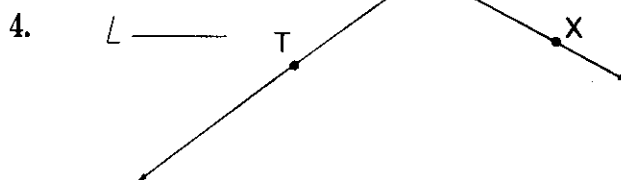
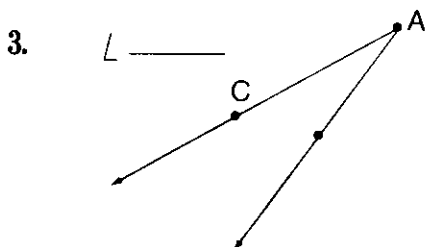


line MN line segment MN line M



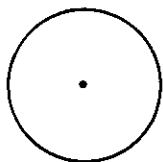
line segment PR line R line RP

Name each angle.



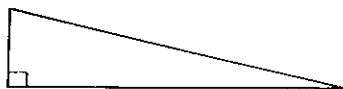
Write the letter for the name of each figure in the blank.

6. _____



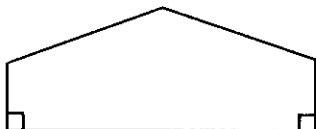
a. octagon

7. _____



b. triangle

8. _____



c. hexagon

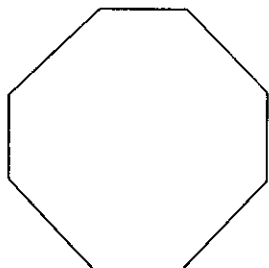
d. pentagon

e. square

f. quadrilateral

g. circle

9. _____

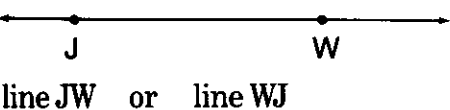


Perfect score: 9 My score: _____

Lesson 1 Lines and Line Segments

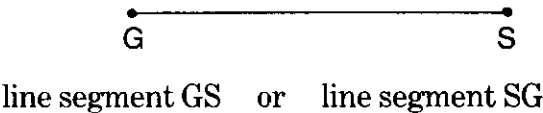
A line has no endpoints.

To name a line, name any two points on the line.



A line segment has two endpoints.

A line segment is part of a line. The line segment consists of the endpoints and all points on the line between the endpoints. To name a line segment, name the endpoints.



Circle the correct name for each figure.

- | | | | | |
|----|--|-----------------|-----------------|---------|
| 1. | | line AB | line segment BA | line CA |
| 2. | | line segment FG | line GF | line FG |
| 3. | | line CD | line segment CE | line CE |
| 4. | | line segment MN | line MM | line MN |
| 5. | | line RS | line segment RS | line SR |
| 6. | | line segment KI | line KI | line IK |
| 7. | | line LZ | line segment ZX | line ZX |
| 8. | | line segment PE | line EP | line EE |
| 9. | | line V | line segment VT | line VT |

Draw and label the following.

10. line segment HQ

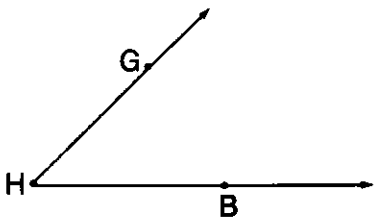
Perfect score: 10 My score: _____

Lesson 2 Angles

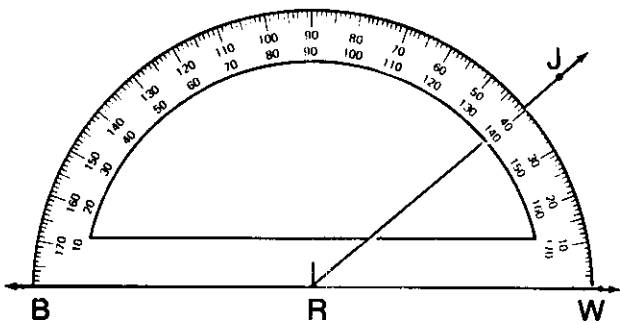
NAME _____

An **angle** has two sides and a **vertex**.

Angle GHB (denoted $\angle GHB$) has a vertex of H. When naming an angle, use the vertex as the middle letter.



To use a protractor to measure an angle:



Place the center of the protractor at the vertex of the angle. Align one side of the angle with the base of the protractor. Use the scale starting at 0 and read the measure of the angle.

The measurement of $\angle JRW$ is 40° .
The measurement of $\angle JRB$ is 140° .

Name each angle. Then use a protractor to measure each angle.

1. $\angle$ _____; _____ $^\circ$

2. $\angle$ _____; _____ $^\circ$

$\angle$ _____; _____ $^\circ$

$\angle$ _____; _____ $^\circ$

$\angle$ _____; _____ $^\circ$

$\angle$ _____; _____ $^\circ$

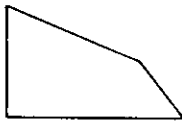
Perfect score: 6 My score: _____

Lesson 3 Polygons

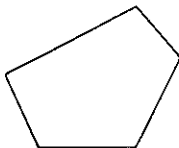
Polygons are named for the number of sides they have.



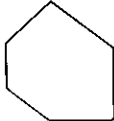
Triangle
 3 sides



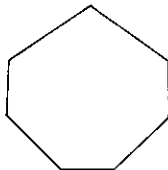
Quadrilateral
 sides



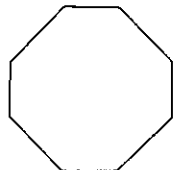
Pentagon
 sides



Hexagon
 sides

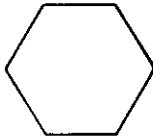


Heptagon
 sides



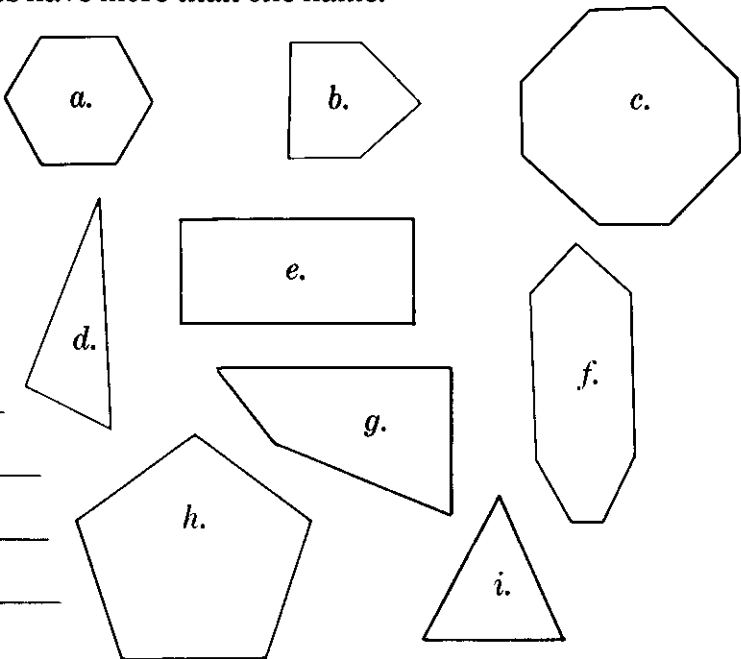
Octagon
 sides

Look at the hexagon at the right.
All of the sides are the same length.
All of the angles have the same measure.
This is a **regular** hexagon.



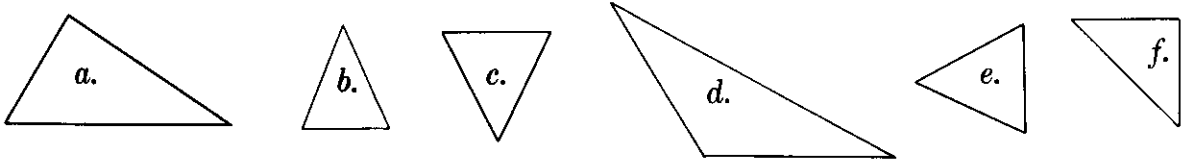
On the line after each name, write the letter(s) of the figure(s) it describes. Some names will have more than one letter. Some figures have more than one name.

- 1. pentagon b., h.
- 2. hexagon
- 3. octagon
- 4. triangle
- 5. heptagon
- 6. quadrilateral
- 7. regular triangle
- 8. regular hexagon
- 9. regular pentagon



Answer the following questions.

- 10. What is another name for a regular quadrilateral?
- 11. Which of the triangles shown below are regular triangles?



Perfect score: 15 My score:

NAME _____

Lesson 4 Polygons and Circles

To name a **polygon**, use the letters of the vertices (plural of **vertex**).

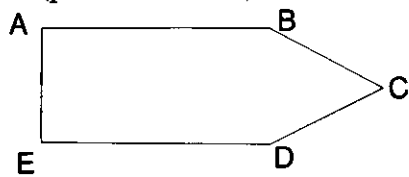
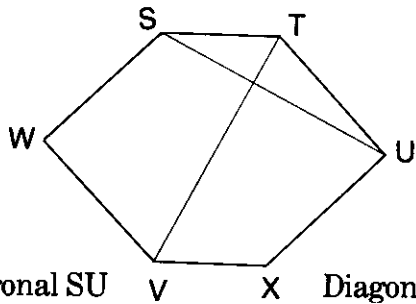


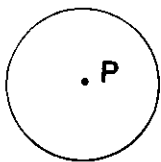
Figure ABCDE or Pentagon ABCDE

A line segment that connects two vertices, but is not a side, is called a **diagonal**.



Diagonal SU V X Diagonal VT

To name a **circle**, use the letter of the center.



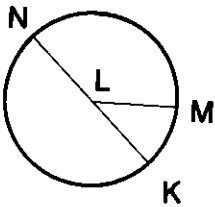
Circle P

A line segment from the center of the circle to a point on the circle is a **radius**. A line segment that has endpoints on the circle and passes through the center of the circle is a **diameter**.

Radius LM

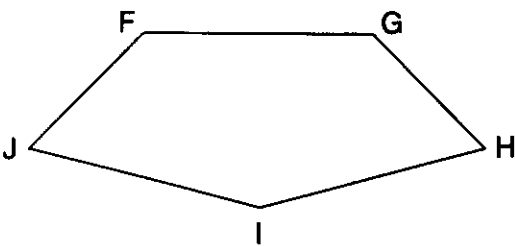
Diameter KN

Note that KL and LN are also **radii** (plural of radius).



1. Draw and name all of the diagonals of figure FGHIJ.

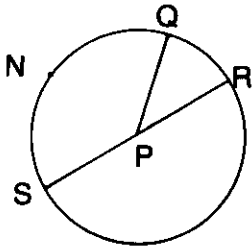
2. Are all of the diagonals of figure FGHIJ the same length? _____



3. Name a radius of circle P. _____

4. Name a diameter of circle P. _____

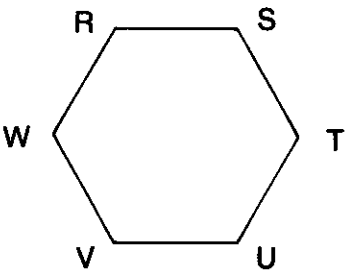
5. In circle P, draw a diameter that goes through point N.



6. Is figure RSTUVW a regular hexagon? _____

7. Draw all the diagonals for figure RSTUVW.

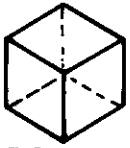
8. How many diagonals does figure RSTUVW have? _____



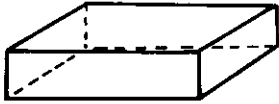
9. Are all of the diagonals of figure RSTUVW the same length? _____

Perfect score: 9 My score: _____

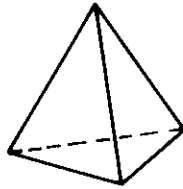
Lesson 5 Three-Dimensional Objects



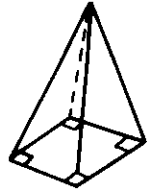
Cube



Rectangular Prism



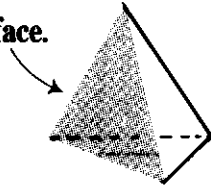
Triangular Pyramid



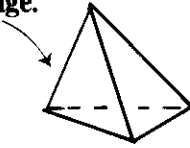
Square Pyramid

Each of these objects has faces, edges, and vertices.
Each of the faces of these objects is a polygon.

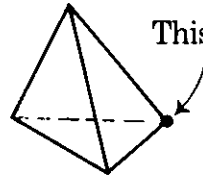
This is a **face**.



This is an **edge**.



This is a **vertex**.



edge
edges

face
faces

rectangle
rectangles

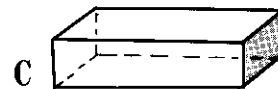
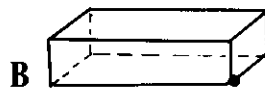
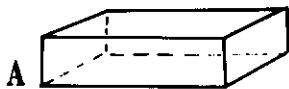
square
squares

triangle
triangles

vertex
vertices

Choose from the list above to complete each sentence. You might use some words more than once. You might not use all the words.

- All of the faces of a cube are _____.
- All of the faces of a rectangular prism are _____.
- The bottom face of a triangular pyramid is a _____.
- The colored part of object **A** below is a(n) _____.
- The colored part of object **B** below is a(n) _____.
- The colored part of object **C** below is a(n) _____.



Answer each question with *Yes* or *No*.

- Are all squares rectangles? _____
- Are all the faces of a cube rectangles? _____
- Is a cube a rectangular prism? _____

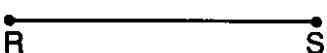
Perfect score: 9 My score: _____

NAME _____

CHAPTER 12 TEST

Choose the correct name for each figure.

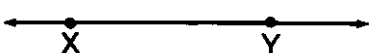
1.



line segment SR

line segment R

line RS
2.



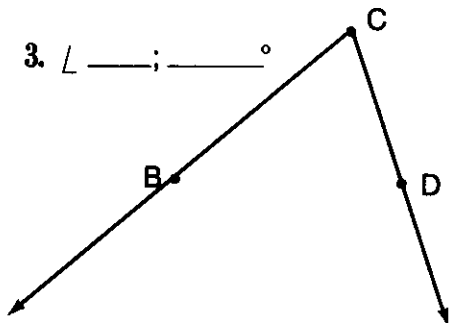
line segment XY

line Y

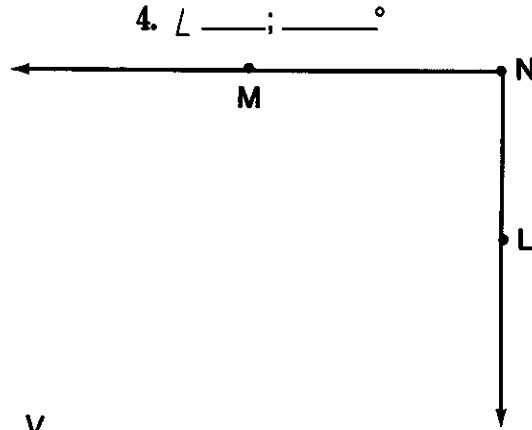
line XY

Name each angle. Then use a protractor to measure each angle.

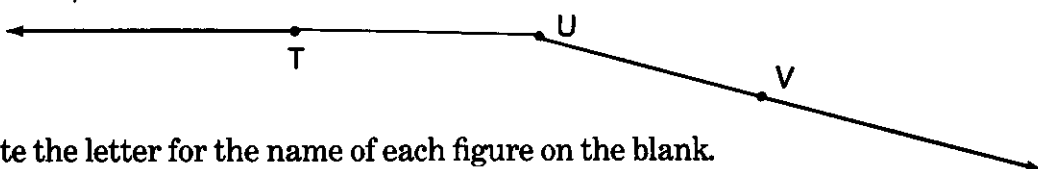
3.



$\angle$ ____; ____ $^\circ$
4.



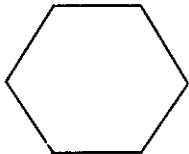
$\angle$ ____; ____ $^\circ$
5.



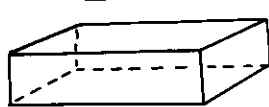
$\angle$ ____; ____ $^\circ$

Write the letter for the name of each figure on the blank.

6.



7.



8.



- a. octagon

b. triangle

c. regular hexagon

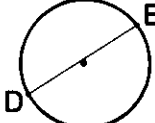
d. pentagon

e. quadrilateral

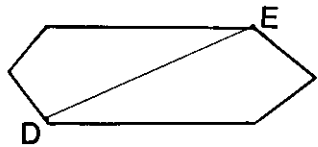
f. prism

Write the letter for the name of the colored part of each figure.

9.



10.



- a. radius DE

b. side DE

c. diagonal DE

d. diameter DE

Perfect score: 13 My score: _____

TEST—Chapters 1–7

Solve each problem.

a

$$\begin{array}{r} 1. \quad 42 \\ + 51 \\ \hline \end{array}$$

b

$$\begin{array}{r} 92 \\ + 78 \\ \hline \end{array}$$

c

$$\begin{array}{r} 134 \\ + 939 \\ \hline \end{array}$$

d

$$\begin{array}{r} 46821 \\ 93289 \\ + 25394 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 75 \\ - 18 \\ \hline \end{array}$$

$$\begin{array}{r} 236 \\ - 57 \\ \hline \end{array}$$

$$\begin{array}{r} 1043 \\ - 389 \\ \hline \end{array}$$

$$\begin{array}{r} 35670 \\ - 34398 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 78 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 147 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 850 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 3780 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 37 \\ \times 28 \\ \hline \end{array}$$

$$\begin{array}{r} 92 \\ \times 40 \\ \hline \end{array}$$

$$\begin{array}{r} 248 \\ \times 75 \\ \hline \end{array}$$

$$\begin{array}{r} 1569 \\ \times 136 \\ \hline \end{array}$$

$$5. \quad 6 \overline{) 96}$$

$$8 \overline{) 984}$$

$$9 \overline{) 3198}$$

$$73 \overline{) 7338}$$

Continued on the next page.

Test—Chapters 1–7 (Continued)

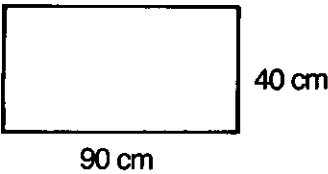
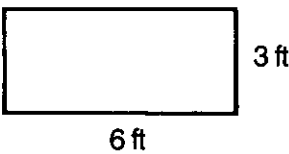
- | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|-------------------------|----------------------|------------------------|-------------------------|
| 6. $5 \overline{) 92}$ | $4 \overline{) 248}$ | $49 \overline{) 1682}$ | $89 \overline{) 17539}$ |
| 7. $14 \overline{) 98}$ | $9 \overline{) 186}$ | $81 \overline{) 2734}$ | $53 \overline{) 69791}$ |

Complete the following.

- | <i>a</i> | <i>b</i> |
|-----------------------|-------------------------|
| 8. 180 cm = _____ mm | 3,000 liters = _____ kl |
| 9. 21 g = _____ mg | 300 kg = _____ g |
| 10. 36 in. = _____ yd | 1 mi 200 yd = _____ yd |
| 11. 6 gal = _____ qt | 8 lb 2 oz = _____ oz |

Find the perimeter and area of each figure.

- | <i>a</i> | <i>b</i> |
|--------------------------|---------------------------------|
| 12. perimeter = _____ ft | perimeter = _____ centimeters |
| area = _____ square feet | area = _____ square centimeters |



Perfect score: 40 My score: _____

FINAL TEST—Chapters 1–12

Solve each problem.

a

1.
$$\begin{array}{r} 36 \\ +57 \\ \hline \end{array}$$

b

$$\begin{array}{r} 83 \\ +79 \\ \hline \end{array}$$

c

$$\begin{array}{r} 798 \\ +135 \\ \hline \end{array}$$

d

$$\begin{array}{r} 45678 \\ +82902 \\ \hline \end{array}$$

e

$$\begin{array}{r} 7314 \\ 6452 \\ 9715 \\ +726 \\ \hline \end{array}$$

$$\begin{array}{r} 63 \\ -18 \\ \hline \end{array}$$

$$\begin{array}{r} 178 \\ -65 \\ \hline \end{array}$$

$$\begin{array}{r} 1270 \\ -982 \\ \hline \end{array}$$

$$\begin{array}{r} 59246 \\ -37095 \\ \hline \end{array}$$

$$\begin{array}{r} 76005 \\ -9146 \\ \hline \end{array}$$

$$\begin{array}{r} 73 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 124 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 785 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 387 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 420 \\ \times 32 \\ \hline \end{array}$$

$$\begin{array}{r} 36 \\ \times 27 \\ \hline \end{array}$$

$$\begin{array}{r} 59 \\ \times 40 \\ \hline \end{array}$$

$$\begin{array}{r} 657 \\ \times 89 \\ \hline \end{array}$$

$$\begin{array}{r} 526 \\ \times 154 \\ \hline \end{array}$$

$$\begin{array}{r} 2984 \\ \times 697 \\ \hline \end{array}$$

a

5. $6 \overline{)78}$

b

$8 \overline{)928}$

c

$9 \overline{)3729}$

d

$51 \overline{)6182}$

6. $5 \overline{)97}$

$4 \overline{)231}$

$45 \overline{)935}$

$93 \overline{)27658}$

Continued on the next page.

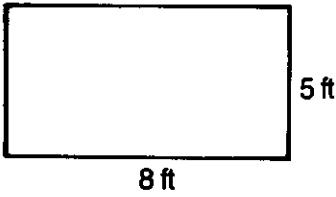
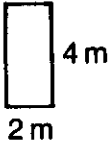
Final Test (Continued)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
7. $13\overline{)93}$	$7\overline{)821}$	$68\overline{)1783}$	$13\overline{)59671}$
8. $25\overline{)90}$	$18\overline{)378}$	$32\overline{)3185}$	$72\overline{)29450}$

Complete the following.

<i>a</i>	<i>b</i>
9. 160 cm = _____ mm	6 km = _____ m
10. 17 liters = _____ ml	9,000 liters = _____ kl
11. 9 g = _____ mg	30 kg = _____ g
12. 36 in. = _____ ft	1 mi 25 ft = _____ ft
13. 2 yd = _____ in.	2 qt 1 pt = _____ pt
14. 3 gal = _____ qt	6 lb 6 oz = _____ oz

Find the perimeter and area of each figure.

<i>a</i>	<i>b</i>
15. perimeter = _____ ft	perimeter = _____ meters
area = _____ square feet	area = _____ square meters
	

Continued on the next page.

Final Test (Continued)

Change each fraction or mixed numeral to simplest form.

	<i>a</i>	<i>b</i>	<i>c</i>
16.	$\frac{9}{27}$	$\frac{24}{30}$	$\frac{35}{8}$

17.	$6\frac{4}{6}$	$1\frac{7}{3}$	$9\frac{16}{12}$
-----	----------------	----------------	------------------

Write each answer in simplest form.

	<i>a</i>	<i>b</i>	<i>c</i>
18.	$\frac{2}{3} \times \frac{1}{5}$	$\frac{7}{8} \times \frac{1}{3}$	$\frac{2}{7} \times \frac{3}{5}$

19.	$1\frac{1}{3} \times \frac{2}{5}$	$\frac{3}{4} \times 2\frac{3}{6}$	$2\frac{2}{3} \times 3\frac{3}{8}$
-----	-----------------------------------	-----------------------------------	------------------------------------

20.	$3 \times \frac{5}{6}$	$1\frac{2}{3} \times 6$	$2\frac{1}{2} \times 3\frac{1}{3}$
-----	------------------------	-------------------------	------------------------------------

21.	$\frac{7}{10} \times 5$	$3\frac{7}{8} \times 16$	$4\frac{2}{5} \times 2\frac{3}{11}$
-----	-------------------------	--------------------------	-------------------------------------

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
22.	$\frac{3}{5}$ $+\frac{1}{5}$ 	$\frac{2}{7}$ $+\frac{3}{7}$ 	$\frac{5}{8}$ $+\frac{1}{8}$ 	$\frac{3}{10}$ $+\frac{3}{10}$

23.	$1\frac{3}{8}$ $+2\frac{1}{8}$ 	$13\frac{4}{9}$ $+7\frac{8}{9}$ 	$\frac{3}{5}$ $+\frac{1}{2}$ 	$\frac{7}{8}$ $+\frac{1}{4}$
-----	--	---	--	--

24.	$\frac{5}{12}$ $+\frac{3}{4}$ 	$\frac{9}{10}$ $+\frac{2}{3}$ 	$7\frac{2}{5}$ $+2\frac{1}{10}$ 	$12\frac{3}{4}$ $+9\frac{2}{3}$
-----	---	---	---	---

Continued on the next page.

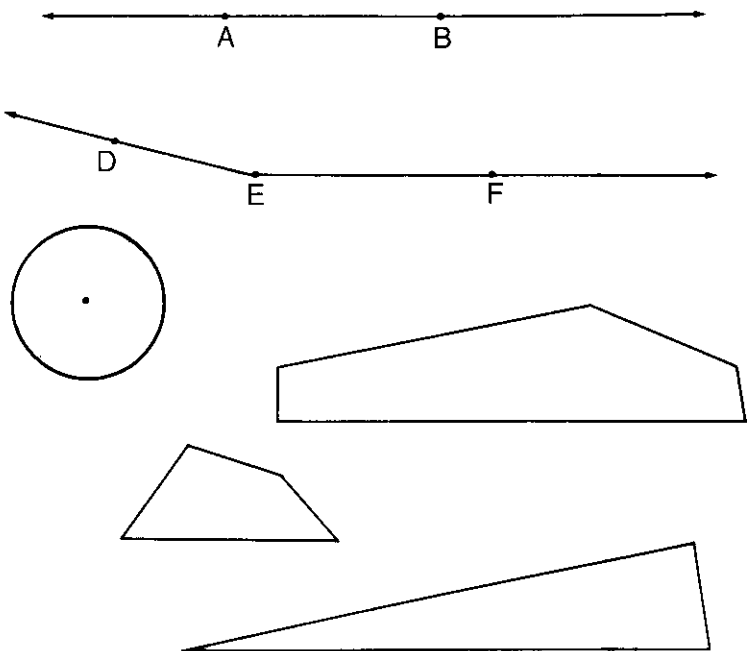
Final Test (Continued)

Write each answer in simplest form.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
25.	$\begin{array}{r} \frac{7}{10} \\ -\frac{3}{10} \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -\frac{3}{5} \\ \hline \end{array}$	$\begin{array}{r} 6\frac{3}{4} \\ -2\frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} 9\frac{1}{8} \\ -4\frac{7}{8} \\ \hline \end{array}$
26.	$\begin{array}{r} \frac{7}{8} \\ -\frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} \frac{5}{6} \\ -\frac{2}{9} \\ \hline \end{array}$	$\begin{array}{r} 4\frac{7}{8} \\ -3\frac{2}{3} \\ \hline \end{array}$	$\begin{array}{r} 6\frac{9}{10} \\ -1\frac{7}{8} \\ \hline \end{array}$
27.	$\begin{array}{r} \frac{11}{12} \\ -\frac{3}{4} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ -\frac{2}{3} \\ \hline \end{array}$	$\begin{array}{r} 2\frac{1}{3} \\ -\frac{7}{8} \\ \hline \end{array}$	$\begin{array}{r} 9\frac{1}{4} \\ -6\frac{2}{5} \\ \hline \end{array}$

Name each figure.

28. _____
29. _____
30. _____
31. _____
32. _____
33. _____



Answers

Math - Grade 5

(Answers for Pre-Tests and Tests are given on pages 155–157.)

Page 3

	a	b	c	d	e	f	g	h
1.	9	11	7	14	7	14	10	11
2.	11	14	16	5	13	10	8	12
3.	16	12	9	6	12	11	10	9
4.	10	15	10	14	17	6	5	8
5.	11	10	8	11	7	13	8	12
6.	13	9	5	12	15	14	10	17
7.	9	9	15	4	9	15	10	7
8.	8	16	10	13	13	7	7	11
9.	7	12	18	12	8	11	13	8

Page 4

	a	b	c	d	e	f	g	h
1.	5	6	4	5	7	7	6	8
2.	5	7	7	5	4	4	4	9
3.	8	4	7	3	2	8	5	6
4.	7	9	7	7	7	9	8	4
5.	6	4	8	9	6	1	2	8
6.	1	8	6	2	6	9	6	4
7.	5	1	3	8	9	8	4	9
8.	8	5	2	1	3	2	9	3
9.	5	2	6	9	3	3	7	3

Page 5

	a	b	c	d	e	f
1.	77	88	88	97	57	69
2.	62	75	91	80	84	65
3.	125	143	111	151	132	103
4.	63	68	154	105	80	110
5.	52	15	26	51	34	19
6.	69	19	25	17	18	27
7.	89	48	68	96	69	68

Page 6

1. 36; 47; 83 3. 161 5. 32
2. 85; 76; 9 4. 103; 35; 68

Page 7

	a	b	c	d	e	f
1.	796	895	860	694	827	909
2.	1185	1477	1015	852	1245	1191
3.	1605	1525	1221	1117	1211	1104
4.	422	522	228	527	585	282
5.	920	651	839	716	1256	1198
6.	885	589	893	1386	1273	1390
7.	1622	1492	509	1195	1237	1297

Page 8

1. subtract; 177 4. subtract; 199
2. add; 942 5. subtract; 1207
3. add; 1751

Page 9

	a	b	c
1.	34984	56139	81730
2.	58349	42804	118133
3.	67115	85899	55001
4.	47226	65628	79089

Page 10

1. 4378 4. 46089 7. 20200
2. 21917 5. 39743
3. 4939 6. 172800

Page 11

	a	b	c	d	e
1.	989	973	778	2068	1496
2.	16093	12600	9882	177322	120611
3.	1225	2409	18976	138081	296013
4.	2808	7566	22183	286017	173691
5.	2611	7551	108531	124728	56635

Page 12

1. 1709 4. 44749 7. 62737
2. 1540 5. 83015
3. 44114 6. 52021

Page 15

	a	b	c	d	e	f	g	h
1.	8	16	14	4	12	10	6	2
2.	24	6	27	18	15	0	12	9
3.	8	4	24	32	28	12	36	16
4.	35	25	10	30	20	45	15	40
5.	36	12	54	18	6	42	30	48
6.	7	21	63	14	42	49	56	35
7.	40	8	56	16	72	48	24	64
8.	72	18	9	54	63	36	45	81
9.	0	0	0	0	6	2	9	7

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1. 6; 8; 48 3. 8; 9; 72 5. 64
2. 9; 7; 63 4. 6; 7; 42 6. 45

Page 17

	a	b	c	d	e	f
1.	64	63	84	264	639	842
2.	64	72	84	492	381	860
3.	219	168	405	704	688	789
4.	285	168	148	768	770	885
5.	168	376	195	2982	2148	1170
6.	456	96	350	1578	2045	5110
7.	648	665	648	5032	5607	5922

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1. 32; 3; 96 4. 121; 4; 484
2. 19; 5; 95 5. 1008
3. 54; 3; 162 6. 5664

Page 19

	a	b	c	d	e	f
1.	69	690	86	860	204	2040
2.	148	1480	324	3240	657	6570
3.	1260	1500	2160	4340	5040	1600
4.	713	1386	540	595	864	
5.	1404	1517	448	2774	1288	

Page 20

1. 1440 3. 3723 5. 4624 7. 1102
2. 768 4. 3384 6. 6375 8. 2204

Page 21

	a	b	c	d	e
1.	546	736	2214	962	1102
2.	4176	972	2200	729	1638
3.	2002	6006	10291	9984	19505
4.	9855	5538	18590	12986	21924

Answers Grade 5

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- | | | |
|---------|----------|----------|
| 1. 7056 | 4. 8760 | 7. 40641 |
| 2. 5610 | 5. 23320 | 8. 39936 |
| 3. 3024 | 6. 57120 | 9. 26865 |

Page 23

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|----------|----------|----------|----------|
| 1. | 632 | 63200 | 12843 | 1284300 |
| 2. | 88608 | 109125 | 128928 | 110157 |
| 3. | 86900 | 101913 | 901203 | 425088 |
| 4. | 528525 | 668928 | 2323680 | 2261646 |

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- | | | |
|----------|-----------|------------|
| 1. 72504 | 4. 604800 | 7. 1636250 |
| 2. 74375 | 5. 329472 | 8. 2399375 |
| 3. 43680 | 6. 268544 | |

Page 27

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
|-----|----------|----------|----------|----------|----------|----------|
| 1. | 3 | 3 | 2 | 4 | 2 | 2 |
| 2. | 5 | 1 | 0 | 9 | 1 | 1 |
| 3. | 7 | 7 | 6 | 6 | 4 | 7 |
| 4. | 5 | 9 | 6 | 4 | 5 | 9 |
| 5. | 3 | 9 | 8 | 8 | 5 | 9 |
| 6. | 5 | 3 | 4 | 7 | 6 | 4 |
| 7. | 8 | 8 | 8 | 8 | 4 | 6 |
| 8. | 3 | 3 | 6 | 0 | 9 | 9 |
| 9. | 5 | 7 | 5 | 6 | 7 | 6 |
| 10. | 2 | 7 | 4 | 8 | 7 | 5 |

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|-------------|------------|------|
| 1. 18; 6; 3 | 3. 6; 6; 1 | 5. 8 |
| 2. 18; 3; 6 | 4. 8 | 6. 6 |

Page 29

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> |
|----|----------|----------|----------|----------|----------|
| 1. | 12 | 18 | 12 | 27 | 17 |
| 2. | 37 | 29 | 15 | 112 | 256 |
| 3. | 37 | 35 | 42 | 77 | 186 |

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|--------------|----------------|--------|
| 1. 84; 6; 14 | 3. 24 | 5. 234 |
| 2. 91; 7; 13 | 4. 848; 4; 212 | 6. 58 |

Page 31

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> |
|----|----------|----------|----------|----------|----------|
| 1. | 27 r1 | 17 r1 | 24 r1 | 25 r1 | 23 r1 |
| 2. | 11 r6 | 13 r4 | 37 r2 | 31 r3 | 190 |
| 3. | 57 r3 | 130 r3 | 137 r3 | 241 r1 | 138 r4 |

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|-------|----------|-----------|
| 1. 40 | 2. 53; 1 | 3. 148; 2 |
|-------|----------|-----------|

Page 33

- | | <i>a</i> | <i>b</i> | <i>c</i> |
|----|----------|----------|----------|
| 1. | 276 | 220 | 2316 |
| 2. | 126 r1 | 84 r1 | 190 r2 |
| 3. | 352 r2 | 121 | 302 r3 |

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- | | | |
|----------|-----------|------------|
| 1. 48; 5 | 3. 325; 0 | 5. 247; 7 |
| 2. 29; 6 | 4. 191; 3 | 6. 2544; 1 |

Page 37

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> |
|----|----------|----------|----------|----------|----------|
| 1. | 7 | 6 | 5 | 5 r4 | 7 |
| 2. | 6 r2 | 5 r5 | 4 r10 | 6 r2 | 7 r8 |
| 3. | 4 | 4 | 2 r20 | 4 | 3 r10 |

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|---------|---------|---------|
| 1. 6 | 3. 4 | 5. 4; 4 |
| 2. 5; 3 | 4. 5; 7 | 6. 4 |

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- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> |
|----|----------|----------|----------|----------|----------|
| 1. | 27 | 16 | 19 | 35 | 67 r10 |
| 2. | 12 r4 | 13 r10 | 12 r8 | 15 | 20 r4 |

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- | | | |
|----------|----------|---------------|
| 1. 32 | 3. 24; 6 | 5. 24; is not |
| 2. 28; 2 | 4. 26 | 6. 52 |

Page 41

- | | <i>a</i> | <i>b</i> | <i>c</i> |
|----|----------|----------|----------|
| 1. | 5 r8 | 6 | 4 r2 |
| 2. | 6 | 21 | 26 r4 |
| 3. | 13 r5 | 18 r24 | 18 |

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|---------|-----------|-----------|
| 1. 4; 3 | 3. 7; 7 | 5. 35; 10 |
| 2. 6; 2 | 4. 28; 18 | |

Page 43

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|----------|----------|----------|----------|
| 1. | 165 | 157 | 243 | 122 |
| 2. | 213 r10 | 318 r17 | 167 r3 | 142 r62 |
| 3. | 56 | 52 | 42 r10 | 52 r26 |

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|-----------|-----------|------------|
| 1. 351 | 3. 84 | 5. 144 |
| 2. 342; 7 | 4. 72; 14 | 6. 212; 12 |

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- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|----------|----------|----------|----------|
| 1. | 27 r20 | 123 r10 | 5 | 4 r1 |
| 2. | 217 r2 | 307 | 33 | 156 |
| 3. | 6 | 9 | 10 r3 | 163 r8 |
| 4. | 85 | 241 | 320 | 32 |
| 5. | 400 r9 | 31 | 351 | 35 r24 |

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|--------|--------|--------|---------|
| 1. 576 | 2. 288 | 3. 144 | 4. 8064 |
|--------|--------|--------|---------|

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- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|----------|----------|----------|----------|
| 1. | 125 | 324 r6 | 85 r91 | 143 |
| 2. | 3216 | 432 r10 | 1234 | 754 |

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|-----------|------------|--------|
| 1. 257 | 3. 245 | 5. 540 |
| 2. 75; 25 | 4. 316; 21 | 6. 600 |

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- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|----------|----------|----------|----------|
| 1. | 412 | 512 | 815 | 2146 |
| 2. | 827 r22 | 3123 r30 | 2088 r16 | 705 r50 |

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|------------|--------|---------|
| 1. 243 | 4. 203 | 7. 1218 |
| 2. 2452; 6 | 5. 406 | |
| 3. 543; 6 | 6. 812 | |

Page 53

- | | <i>a</i> | <i>b</i> |
|----|----------|----------|
| 1. | 2126 r10 | 612 r52 |
| 2. | 726 r2 | 832 r5 |
| 3. | 1268 | 1287 r12 |

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- | | | |
|--------|------------|-------------|
| 1. 438 | 3. 878; 33 | 5. 903; 7 |
| 2. 198 | 4. 872 | 6. 1806; 14 |

Page 55

	a	b	c	d
1.	1 r34	26 r3	145	1290 r17
2.	2 r6	22 r12	225	2250
3.	7 r3	8	35 r21	568
4.	1 r8	15 r9	80 r5	680 r5

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1.	57	3. 144 ; 6	5. 140
2.	is	4. 172 ; 54	6. 14000

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	a	b		
1.	7	70	5.	65
2.	4	40	6.	78
3.	2	20	7.	32
4.	5	50	8.	55

9-10. Have your teacher check your work.

Page 60

	a	b		
1.	5	12	3.	91 86
2.	8	11		

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- 1-3. Answers will vary.
4. taller
5. Answers will vary.
6. 1000
7. Sung-Chi ; 500

Page 62

	a	b		
1.	50,000	6	5.	3000 ; Ted ; 1000
2.	7	2	6.	Charles ; Su-Lyn
3.	90	8	7.	Answers will vary.
4.	300	50		

Page 63

	a	b	c
1.	10	3000	42
2.	1225	540	150
3.	54	5. 140	7. 15,200
4.	126	6. 4375	

Page 64

- 1-2. Answers will vary.
3. 98 ; 588
4. 118 ; 840

Page 65

1.	10	3. 2	4. 5
2.	Answers will vary.		5. 1

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	a	b		
1.	7000	3	5.	liter
2.	2000	9	6.	Larry ; 500
3.	20,000	48,000	7.	58
4.	4	5	8.	1000

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1.	2	3. 200	5. 3
2.	2	4. 2	6. 17

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	a	b		
1.	2000	6000	5.	penny ; 1000
2.	9000	9000	6.	3
3.	2	7	7.	1362
4.	3	8	8.	Judy ; 5

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	a	b		a	b
1.	72	38	4.	7	22
2.	72	227	5.	5	151
3.	15,840	5730	6.	5	30
7.	72 ; 70 ; Becky ; 2				

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	a	b		a	b
1.	18	21	3.	12	19
2.	12	20	4.	12	26

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	a	b			
1.	10	42	3.	40	6. 432
2.	64	4	4.	96	7. 270
			5.	8094	

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1.	68	4. 16 ; 12
2.	360 ; 8100	5. 11 ; 8 ; 38 ; 88
3.	500 ; 15,625	

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	a	b		a	b
1.	4	22	4.	80	27
2.	2	98	5.	30	15
3.	32	7	6.	12	
7.	3 ; 5 ; Sallie ; 2				

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1.	8 ; 4	3. 25 ; 50	5. 15	7. 10
2.	31 ; 62	4. 60	6. 20	

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	a	b	c	d
1.	$\frac{1}{2}, \frac{1}{2}$	$\frac{1}{3}, \frac{2}{3}$	$\frac{1}{4}, \frac{3}{4}$	$\frac{2}{3}, \frac{1}{3}$
2.	$\frac{1}{8}, \frac{7}{8}$	$\frac{3}{8}, \frac{5}{8}$	$\frac{5}{8}, \frac{3}{8}$	$\frac{7}{8}, \frac{1}{8}$
3.	$\frac{2}{5}, \frac{3}{5}$	$\frac{2}{5}, \frac{2}{5}$	$\frac{4}{5}, \frac{1}{5}$	$\frac{1}{5}, \frac{4}{5}$
4.	$\frac{1}{3}, \frac{2}{3}$	$\frac{2}{6}, \frac{4}{6}$	$\frac{2}{3}, \frac{1}{3}$	$\frac{4}{6}, \frac{2}{6}$

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	a	b		a	b
1.	$\frac{3}{5}$	$\frac{2}{3}$	4.	$\frac{1}{5}$	$\frac{1}{6}$
2.	$\frac{4}{7}$	$\frac{4}{5}$	5.	$\frac{2}{9}$	$\frac{5}{9}$
3.	$\frac{5}{8}$	$\frac{3}{4}$			

6-7. Answers will vary.

Page 81

	a	b	c		a	b	c
1.	$\frac{2}{3}$	$\frac{1}{4}$	$\frac{4}{5}$	4.	$\frac{3}{5}$	$\frac{1}{8}$	$\frac{1}{2}$
2.	$\frac{3}{8}$	$\frac{4}{5}$	$\frac{3}{4}$	5.	$\frac{2}{3}$	$\frac{5}{6}$	$\frac{3}{4}$
3.	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$				

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	a	b	c		a	b	c
1.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	5.	$\frac{2}{5}$	$\frac{3}{7}$	$\frac{1}{4}$
2.	$\frac{1}{2}$	$\frac{1}{5}$	$\frac{1}{5}$	6.	$\frac{5}{6}$	$\frac{5}{9}$	$\frac{6}{7}$
3.	$\frac{1}{6}$	$\frac{2}{3}$	$\frac{2}{3}$	7.	$\frac{3}{5}$	$\frac{5}{6}$	$\frac{1}{4}$
4.	$\frac{2}{7}$	$\frac{2}{5}$	$\frac{1}{3}$	8.	$\frac{2}{3}$	$\frac{3}{7}$	$\frac{1}{4}$

Answers Grade 5

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$2\frac{1}{4}$	$1\frac{1}{5}$	$1\frac{1}{8}$	4.	$2\frac{1}{7}$	$2\frac{2}{5}$	$2\frac{1}{9}$
2.	$2\frac{2}{3}$	$1\frac{4}{5}$	$2\frac{1}{3}$	5.	$3\frac{1}{7}$	$9\frac{1}{2}$	$5\frac{2}{5}$
3.	$1\frac{3}{4}$	$4\frac{5}{6}$	$4\frac{2}{3}$	6.	$4\frac{3}{8}$	$6\frac{1}{7}$	$9\frac{1}{6}$

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$\frac{7}{3}$	$\frac{7}{2}$	$\frac{19}{4}$	3.	$\frac{11}{5}$	$\frac{9}{7}$	$\frac{38}{7}$
2.	$\frac{34}{5}$	$\frac{27}{8}$	$\frac{23}{9}$	4.	$\frac{77}{12}$	$\frac{73}{10}$	$\frac{126}{15}$

Page 85

	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$3\frac{2}{3}$	$1\frac{1}{2}$	$2\frac{3}{4}$	3.	$2\frac{2}{5}$	$4\frac{1}{2}$	$3\frac{1}{3}$
2.	$4\frac{1}{4}$	$2\frac{3}{8}$	$1\frac{5}{6}$	4.	$2\frac{1}{5}$	$3\frac{1}{2}$	$6\frac{1}{3}$

Page 86

	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$\frac{3}{7}$	$\frac{4}{9}$	$\frac{3}{5}$	4.	$1\frac{1}{2}$	$2\frac{2}{3}$	$1\frac{2}{3}$
2.	$\frac{1}{3}$	$\frac{7}{8}$	$\frac{5}{7}$	5.	$1\frac{4}{5}$	$2\frac{1}{3}$	$3\frac{3}{5}$
3.	$1\frac{4}{5}$	$2\frac{2}{3}$	$1\frac{5}{7}$	6.	$4\frac{6}{7}$	$5\frac{2}{3}$	$2\frac{3}{4}$

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	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>
1.	$\frac{1}{8}$	$\frac{1}{4}$	3.	$\frac{1}{10}$	$\frac{3}{10}$
2.	$\frac{1}{6}$	$\frac{1}{6}$			

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.		$\frac{2}{15}$	$\frac{5}{48}$	4.	$\frac{2}{35}$	$\frac{5}{12}$	$\frac{10}{21}$
2.	$\frac{3}{28}$	$\frac{5}{18}$	$\frac{12}{35}$	5.	$\frac{4}{15}$	$\frac{15}{32}$	$\frac{2}{15}$
3.	$\frac{8}{15}$	$\frac{7}{48}$	$\frac{2}{15}$				

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$\frac{5}{28}$	$\frac{3}{10}$	$\frac{21}{32}$	4.	$\frac{2}{9}$	$\frac{4}{15}$	$\frac{2}{7}$
2.	$\frac{6}{35}$	$\frac{7}{32}$	$\frac{4}{15}$	5.	$\frac{4}{7}$	$\frac{77}{96}$	$\frac{21}{80}$
3.	$\frac{3}{14}$	$\frac{3}{4}$	$\frac{1}{3}$				

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1.	$\frac{1}{2}$	3.	$\frac{1}{8}$	5.	$\frac{1}{3}$	7.	$\frac{3}{8}$
2.	$\frac{7}{10}$	4.	$\frac{1}{4}$	6.	$\frac{1}{3}$		

Page 93

	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$2\frac{1}{7}$	$7\frac{7}{8}$	$5\frac{5}{6}$	3.	6	$7\frac{1}{2}$	$3\frac{1}{5}$
2.	$3\frac{1}{3}$	$7\frac{7}{8}$	$9\frac{3}{5}$	4.	$10\frac{1}{2}$	6	$11\frac{2}{3}$

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1.	10	3.	8	5.	48	7.	$17\frac{1}{2}$
2.	20	4.	24	6.	$8\frac{3}{4}$		

Page 95

	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$22\frac{1}{2}$	$12\frac{1}{4}$	$6\frac{3}{8}$	3.	$19\frac{3}{5}$	$22\frac{2}{3}$	$32\frac{1}{7}$
2.	16	$11\frac{1}{4}$	$9\frac{1}{2}$	4.	$22\frac{2}{3}$	46	$23\frac{1}{3}$

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1.	$24\frac{1}{2}$	3.	$8\frac{3}{4}$	5.	$25\frac{1}{2}$	7.	15
2.	35	4.	$9\frac{3}{4}$	6.	30	8.	$53\frac{3}{4}$

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$5\frac{5}{24}$	$2\frac{11}{12}$	$3\frac{3}{20}$	3.	6	$7\frac{1}{2}$	12
2.	$11\frac{1}{6}$	$2\frac{6}{7}$	$1\frac{13}{15}$	4.	$5\frac{2}{5}$	$1\frac{27}{28}$	8

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1.	$7\frac{7}{8}$	3.	$11\frac{1}{4}$	5.	$18\frac{3}{4}$	7.	$65\frac{5}{8}$
2.	$6\frac{1}{8}$	4.	$110\frac{1}{4}$	6.	50		

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	$\frac{3}{20}$	$\frac{6}{35}$	$\frac{2}{15}$	$\frac{35}{96}$
2.	$\frac{2}{7}$	$\frac{10}{21}$	$\frac{1}{12}$	$\frac{5}{16}$
3.	$2\frac{2}{5}$	$1\frac{1}{7}$	6	$2\frac{1}{4}$
4.	32	110	$23\frac{1}{3}$	$16\frac{2}{3}$
5.	10	$8\frac{2}{5}$	$11\frac{2}{3}$	2

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1.	$\frac{1}{2}$	3.	$\frac{3}{10}$	5.	81	7.	$9\frac{1}{3}$
2.	85	4.	$8\frac{3}{4}$	6.	$13\frac{1}{2}$		

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{5}{6}$	3.	$\frac{1}{6}$	$\frac{7}{9}$	$\frac{3}{5}$
2.	$\frac{5}{6}$	$\frac{4}{7}$	$\frac{7}{8}$	4.	$\frac{5}{8}$	$\frac{4}{5}$	$\frac{8}{9}$

Page 104

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\frac{2}{3}$	$\frac{6}{7}$	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{4}{5}$
2.	$\frac{7}{9}$	$\frac{5}{8}$	$\frac{5}{6}$	$\frac{6}{7}$	$\frac{7}{10}$
3.	$\frac{3}{5}$	$\frac{5}{6}$	$\frac{3}{8}$	$\frac{4}{7}$	$\frac{4}{9}$
4.	$\frac{5}{9}$	$\frac{5}{7}$	$\frac{7}{8}$	$\frac{2}{5}$	$\frac{4}{7}$

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	$1\frac{1}{3}$	$1\frac{2}{5}$	$\frac{1}{3}$	$\frac{1}{2}$
2.	$\frac{3}{4}$	$1\frac{1}{5}$	$1\frac{1}{2}$	$1\frac{1}{2}$
3.	1	$1\frac{4}{7}$	$1\frac{3}{4}$	1
4.	$1\frac{1}{5}$	1	$1\frac{1}{9}$	$1\frac{3}{5}$

Page 106

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	$3\frac{3}{5}$	$6\frac{1}{3}$	$5\frac{2}{5}$	$26\frac{1}{2}$
2.	$7\frac{1}{2}$	8	$4\frac{3}{5}$	$40\frac{2}{5}$
3.	7	$8\frac{2}{3}$	$13\frac{1}{2}$	$64\frac{1}{2}$
4.	$14\frac{1}{3}$	$14\frac{1}{5}$	18	$90\frac{1}{3}$

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	<i>a</i>	<i>b</i>	<i>c</i>		<i>a</i>	<i>b</i>	<i>c</i>
1.	8	6	10	3.	9	6	16
2.	5	4	9				

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1.	a	b	c	3.	a	b	c
2.	2	3	36	4.	2	10	12
	12	8	35			4	36

Page 109

	a	b	c	d
1.	$\frac{9}{10}$	$\frac{11}{12}$	$\frac{11}{15}$	$\frac{7}{10}$
2.	$1\frac{13}{30}$	$\frac{13}{15}$	$\frac{19}{30}$	$1\frac{7}{24}$
3.	$1\frac{1}{12}$	$1\frac{7}{15}$	$1\frac{5}{12}$	$1\frac{5}{24}$

Page 110

	a	b	c	d
1.	$\frac{7}{8}$	$1\frac{1}{2}$	$\frac{4}{6}$	$1\frac{1}{12}$
2.	$\frac{11}{16}$	$\frac{2}{3}$	$\frac{7}{8}$	$1\frac{1}{2}$
3.	$1\frac{5}{16}$	$\frac{2}{3}$	$1\frac{1}{6}$	$1\frac{3}{8}$

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	a	b	c	d
1.	$\frac{5}{18}$	$\frac{5}{12}$	$\frac{23}{24}$	$\frac{11}{60}$
2.	$\frac{13}{24}$	$\frac{11}{12}$	$1\frac{11}{24}$	$\frac{27}{40}$
3.	$\frac{43}{60}$	$1\frac{5}{18}$	$\frac{11}{20}$	$1\frac{2}{15}$
4.	$1\frac{8}{15}$	$1\frac{19}{24}$	$1\frac{31}{40}$	$1\frac{1}{12}$

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1.	$1\frac{3}{8}$	3.	$1\frac{1}{4}$	5.	$\frac{7}{8}$	7.	$1\frac{1}{20}$
2.	$\frac{7}{12}$	4.	$1\frac{5}{12}$	6.	$1\frac{9}{16}$		

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	a	b	c	d
1.	$8\frac{11}{24}$	$7\frac{1}{2}$	$10\frac{1}{12}$	$3\frac{1}{4}$
2.	$6\frac{1}{6}$	$8\frac{1}{4}$	$4\frac{5}{12}$	$4\frac{1}{10}$
3.	$10\frac{5}{8}$	$5\frac{11}{15}$	$6\frac{7}{10}$	$7\frac{7}{8}$
4.	7	$3\frac{7}{8}$	$16\frac{1}{4}$	$14\frac{1}{2}$

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1.	$4\frac{1}{4}$	3.	$4\frac{9}{10}$
2.	17	4.	$6\frac{1}{3}$

Page 115

	a	b	c	d
1.	$\frac{1}{4}$	$9\frac{11}{24}$	$7\frac{1}{12}$	$1\frac{5}{16}$
2.	$7\frac{17}{20}$	$1\frac{33}{70}$	$4\frac{13}{20}$	$1\frac{1}{6}$
3.	$1\frac{3}{14}$	$6\frac{14}{15}$	$6\frac{1}{6}$	$\frac{13}{14}$
4.	$3\frac{4}{15}$	$\frac{23}{36}$	$1\frac{1}{3}$	$11\frac{5}{9}$
5.	$\frac{7}{10}$	$1\frac{17}{18}$	$9\frac{1}{10}$	$17\frac{7}{12}$

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1.	82	3.	$11\frac{5}{8}$	5.	$5\frac{7}{12}$
2.	$4\frac{1}{4}$	4.	$101\frac{1}{10}$	6.	$3\frac{1}{8}$

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	a	b	c	d
1.	$\frac{5}{9}$	$\frac{5}{7}$	$1\frac{1}{9}$	$1\frac{1}{8}$
2.	$\frac{13}{15}$	$1\frac{3}{20}$	$1\frac{1}{4}$	$\frac{11}{12}$
3.	$1\frac{17}{24}$	$\frac{3}{4}$	$\frac{9}{10}$	$1\frac{7}{24}$
4.	$\frac{3}{5}$	$2\frac{1}{9}$	$8\frac{7}{24}$	$6\frac{1}{12}$

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5.	$\frac{8}{15}$	$\frac{19}{20}$	$3\frac{1}{2}$	$6\frac{3}{4}$
----	----------------	-----------------	----------------	----------------

Page 118

1.	$1\frac{1}{4}$	3.	$1\frac{1}{4}$	5.	$6\frac{1}{4}$	7.	$51\frac{3}{8}$
2.	$1\frac{7}{30}$	4.	$1\frac{3}{5}$	6.	6		

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	a	b	c	d	e
1.	$\frac{1}{9}$	$\frac{2}{5}$	$\frac{4}{9}$	$\frac{1}{2}$	$\frac{2}{3}$
2.	$\frac{2}{7}$	$\frac{1}{4}$	$\frac{2}{5}$	$\frac{1}{5}$	$\frac{4}{9}$
3.	$\frac{3}{7}$	$\frac{7}{9}$	$\frac{1}{2}$	$\frac{1}{6}$	$\frac{1}{5}$
4.	$\frac{2}{5}$	$\frac{1}{3}$	$\frac{2}{5}$	$\frac{1}{3}$	$\frac{2}{4}$

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	a	b	c	d
1.	$1\frac{3}{4}$	$2\frac{1}{3}$	$5\frac{4}{5}$	$4\frac{2}{3}$
2.	$3\frac{1}{4}$	$4\frac{3}{5}$	$3\frac{3}{5}$	$5\frac{1}{6}$
3.	$\frac{1}{2}$	$1\frac{1}{8}$	$\frac{7}{8}$	$1\frac{7}{10}$

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	a	b	c	d
1.	$3\frac{2}{9}$	$2\frac{5}{7}$	$5\frac{1}{2}$	$4\frac{1}{4}$
2.	$3\frac{2}{3}$	$5\frac{3}{5}$	$5\frac{3}{4}$	$3\frac{4}{9}$
3.	$2\frac{1}{3}$	$2\frac{1}{2}$	$1\frac{3}{5}$	1

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1.	$5\frac{1}{2}$	3.	$1\frac{1}{4}$	5.	$\frac{1}{2}$
2.	$2\frac{1}{3}$	4.	$\frac{1}{2}$	6.	$3\frac{2}{3}$

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	a	b	c	d
1.	$\frac{4}{15}$	$\frac{13}{20}$	$\frac{3}{8}$	$\frac{2}{9}$
2.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{2}$
3.	$\frac{2}{5}$	$\frac{17}{42}$	$\frac{11}{20}$	$\frac{3}{4}$

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1.	$\frac{1}{3}$	3.	$\frac{19}{30}$	5.	$\frac{5}{16}$	7.	$\frac{19}{36}$
2.	$\frac{1}{6}$	4.	$\frac{1}{6}$	6.	$\frac{1}{6}$		

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	a	b	c	d
1.	$\frac{11}{24}$	$\frac{7}{12}$	$\frac{23}{40}$	$\frac{11}{18}$
2.	$\frac{3}{10}$	$\frac{17}{24}$	$\frac{7}{15}$	$\frac{1}{18}$
3.	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{13}{24}$	$\frac{1}{20}$
4.	$\frac{2}{9}$	$\frac{13}{24}$	$\frac{1}{6}$	$\frac{1}{12}$

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1.	Cal ; $\frac{2}{5}$	3.	$\frac{9}{20}$	5.	Cal ; $\frac{7}{20}$
2.	Cal ; $\frac{1}{5}$	4.	$\frac{1}{10}$		

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	a	b	c	d
1.	$1\frac{7}{12}$	$2\frac{9}{10}$	$4\frac{19}{24}$	$3\frac{1}{9}$
2.	$2\frac{1}{24}$	$1\frac{3}{4}$	$1\frac{1}{14}$	$4\frac{3}{10}$
3.	$4\frac{11}{40}$	$2\frac{7}{9}$	$1\frac{1}{6}$	$\frac{19}{40}$
4.	$3\frac{5}{9}$	$1\frac{13}{35}$	$1\frac{41}{60}$	$1\frac{17}{24}$

Answers Grade 5

Page 130

1. $\frac{3}{4}$
2. $\frac{5}{6}$
3. $2\frac{4}{5}$
4. $\frac{7}{12}$
5. $1\frac{1}{2}$
6. $2\frac{9}{16}$

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- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|-----------------|----------------|-----------------|-----------------|
| 1. | $\frac{1}{3}$ | $\frac{3}{8}$ | $\frac{11}{16}$ | $\frac{3}{4}$ |
| 2. | $\frac{2}{15}$ | $\frac{1}{10}$ | $\frac{1}{2}$ | $\frac{1}{6}$ |
| 3. | $\frac{1}{6}$ | $\frac{7}{40}$ | $\frac{1}{4}$ | $\frac{1}{2}$ |
| 4. | $3\frac{3}{10}$ | $2\frac{1}{3}$ | $2\frac{2}{5}$ | $1\frac{3}{4}$ |
| 5. | $\frac{19}{20}$ | $2\frac{3}{7}$ | $\frac{1}{2}$ | $1\frac{9}{10}$ |

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1. $8\frac{1}{2}$
2. $1\frac{3}{4}$
3. $\frac{2}{15}$
4. $1\frac{3}{4}$
5. $1\frac{3}{4}$
6. $1\frac{5}{6}$
7. $4\frac{3}{8}$

Page 133

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
|----|------------------|-----------------|------------------|------------------|
| 1. | $\frac{5}{9}$ | $\frac{4}{7}$ | $\frac{1}{4}$ | $\frac{3}{5}$ |
| 2. | $1\frac{2}{3}$ | $1\frac{1}{3}$ | $3\frac{1}{2}$ | $\frac{4}{5}$ |
| 3. | $\frac{1}{12}$ | $\frac{2}{15}$ | $\frac{1}{4}$ | $\frac{2}{9}$ |
| 4. | $\frac{1}{8}$ | $\frac{1}{3}$ | $\frac{7}{12}$ | $\frac{37}{60}$ |
| 5. | $1\frac{17}{24}$ | $2\frac{9}{10}$ | $1\frac{43}{60}$ | $5\frac{11}{36}$ |

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1. $1\frac{5}{6}$
2. $2\frac{3}{4}$
3. $\frac{11}{12}$
4. $7\frac{1}{6}$

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1. line AB
2. line segment FG
3. line segment CE
4. line MN
5. line segment RS
6. line segment KI
7. line ZX
8. line EP
9. line segment VT
10. $\overleftrightarrow{HQ}$

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- | <i>a</i> | <i>b</i> | <i>c</i> |
|--|--|--|
| 1. $\angle XYZ$ or $\angle ZYX; 60^\circ$ | $\angle FCD$ or $\angle DCF; 90^\circ$ | $\angle GMS$ or $\angle SMG; 20^\circ$ |
| 2. $\angle SBD$ or $\angle DBS; 130^\circ$ | $\angle VWK$ or $\angle KWV; 65^\circ$ | $\angle NPQ$ or $\angle QPN; 93^\circ$ |

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1. *b*; *h*.
2. *a*.
3. *c*.
4. *d*; *i*.
5. *f*.
6. *e*; *g*.
7. *i*.
8. *a*.
9. *h*.
10. square
11. *c*; *e*.

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1. Have your teacher check your work.
FH or HF; FI or IF; JG or GJ; JH or HJ; IG or GI
2. No
3. QP, PQ, PR, RP, SP, or PS
4. SR or RS
5. Have your teacher check your work.
6. Yes
7. Have your teacher check your work.
8. 9
9. Yes

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1. squares (or rectangles)
2. rectangles
3. triangle
4. edge
5. vertex
6. face
7. Yes
8. Yes
9. Yes

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	4	8	2	12	8	4	9	5
2.	9	5	10	8	12	10	13	12
3.	11	0	11	11	14	8	9	11
4.	6	4	7	2	13	9	10	11
5.	9	13	12	5	10	3	7	5
6.	15	7	11	8	6	10	17	9
7.	6	11	14	18	13	10	12	10
8.	14	7	7	11	7	13	17	9
9.	16	8	10	14	15	12	12	16
10.	15	16	6	13	8	15	9	14

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	7	4	12	5	4	5	11	6
2.	6	8	3	13	16	8	6	9
3.	7	8	11	15	18	3	13	13
4.	12	12	10	12	8	4	14	2
5.	17	6	0	6	14	13	11	11
6.	7	16	11	10	8	10	12	9
7.	7	9	11	14	10	14	9	11
8.	15	10	15	8	9	17	10	9
9.	12	8	7	11	15	5	9	14
10.	9	16	8	13	12	10	13	10

Page ix

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	1	8	5	3	5	3	1	5
2.	2	7	2	9	0	7	3	4
3.	0	2	7	6	4	6	2	7
4.	9	9	4	3	0	4	5	8
5.	9	9	1	4	6	7	3	4
6.	3	8	1	9	4	5	1	8
7.	0	7	2	7	0	8	2	1
8.	4	9	8	8	8	6	7	5
9.	8	5	7	5	9	2	3	7
10.	9	6	0	6	8	6	6	9

Page x

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	4	8	8	6	9	5	9	4
2.	4	4	7	1	7	1	9	0
3.	6	2	8	0	4	6	5	6
4.	9	2	8	3	6	7	6	4
5.	5	9	7	0	7	7	9	2
6.	7	7	5	4	5	1	9	6
7.	3	5	3	8	8	1	6	4
8.	3	2	7	4	8	5	8	5
9.	8	5	0	4	6	5	6	3
10.	8	9	7	1	9	2	9	0

Page xi

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	9	8	21	4	27	45	64	12
2.	36	49	0	30	18	2	42	24
3.	12	0	36	35	32	56	15	0
4.	0	72	24	0	8	56	28	48
5.	10	20	28	0	36	4	81	1
6.	8	5	42	63	3	40	15	18
7.	12	6	25	48	24	72	0	7
8.	54	0	32	9	0	16	63	27
9.	30	45	9	10	35	18	20	14
10.	6	12	24	16	0	21	40	54

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
1.	25	12	1	21	12	0	8	12
2.	18	63	2	9	16	4	45	16
3.	18	0	30	3	10	4	0	27
4.	15	16	24	14	0	36	64	0
5.	18	24	0	36	30	24	6	0
6.	5	28	32	8	54	35	63	56
7.	9	7	35	0	20	81	40	32
8.	48	40	45	36	49	0	15	27
9.	10	18	72	6	48	28	56	54
10.	20	42	72	24	0	42	21	14

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	3	2	5	3	3	3	9
2.	7	2	0	7	9	3	2
3.	4	4	4	6	4	1	4
4.	0	1	5	8	2	3	9
5.	1	0	8	7	5	3	2
6.	9	9	0	4	8	0	7
7.	6	7	8	6	9	5	6
8.	0	7	8	3	1	2	0
9.	4	5	5	7	1	7	8
10.	5	1	0	6	8	2	1
11.	8	4	6	8	7	6	9
12.	6	9	5	2	3	9	5

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	6	7	1	9	0	9	9
2.	9	2	8	8	2	7	9
3.	0	3	8	3	6	9	0
4.	6	7	8	7	4	2	1
5.	5	0	5	2	2	2	5
6.	5	4	6	3	1	8	0
7.	6	5	0	7	3	3	6
8.	6	5	5	8	2	2	7
9.	4	0	7	3	5	8	0
10.	4	9	1	3	3	2	6
11.	1	4	5	4	4	8	9
12.	4	3	9	4	0	7	6

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Page 1

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	68	85	118	124	87
2.	61	49	81	78	69
3.	778	981	405	1304	1243
4.	533	158	351	1087	918
5.	8031	11257	55990	90613	61007
6.	3812	1876	49112	3769	13949
7.	137	147	1002	17069	168398
8.	165	1684	1795	24001	226421

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- 33 ; 24 ; 57
- Kennedy ; 9
- 43 ; 36 ; Kennedy ; 7

Page 13

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	78	691	5402	11130	125008
2.	53	182	1457	9048	7738
3.	71	1569	1059	13089	155316
4.	6365	5655	8886	89065	65559
5.	2320 ; 907 ; 3227		7. 789		
6.	6418				

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	48	70	924	6102
2.	713	1476	2295	3393
3.	3146	13946	15686	25488
4.	39483	268272	72501	86205
5.	1319172	584640	2224288	2664025

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	93	75	1656	4081
2.	299	1092	646	2385
3.	3813	29750	14075	71145
4.	28116	159138	27648	316030
5.	380952	251888	1041390	2529792

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	9	9	15	23
2.	34	74	157	480
3.	513	918	1015	1721
4.	21 r3	37 r1	28 r2	260 r1
5.	23 r5	2306 r2	717 r1	1226 r4

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	24	12	26 r1	13 r3
2.	183	35	87 r6	323 r1
3.	215	1304	382 r2	2107 r2
4.	28	12 r4	11 r6	39
5.	314	2114 r1	368 r2	1201

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	6	7	5 r5	6 r5
2.	13	26	48 r10	23 r21
3.	132	98	56 r10	112 r22
4.	48	52 r20	17 r4	4
5.	126	40	37 r2	38

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	6	6 r11	8 r6	4
2.	15 r10	78	31	42 r2

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3.	121 r10	45	53 r65	156
4.	13	122 r3	4 r11	4
5.	27	83 r20	20 r13	2 r15

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	3	30	300	3000
2.	1120	2372 r15	2222	858
3.	2131 r21	6123 r10	2517 r15	2117 r7
4.	452	576	317 r10	444

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	9	17	41	105
2.	268	123	112	127 r52
3.	742	340 r37	421 r12	735
4.	935	2005 r11	1770 r20	1199 r1
5.	1001	401	3000 r6	801

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	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
1.	6	60	7. 8000	16,000
2.	4	38	8. 5000	5000
3.	10	6	9. 2000	140
4.	60	225	10. 40,000	4200
5.	70	2800	11. 3000	35,000
6.	900	49,000	12. 60,000	34,000

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	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
1.	5	50	6. 7	30
2.	7	70	7. 6000	300
3.	20	24	8. 4000	3
4.	80	375	9. 2000	8000
5.	50	2	10. 7000	5

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	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
1.	48	54	5. 3	7
2.	8	8	6. 2	18
3.	15	46	7. 2	102
4.	5280	100		

	<i>a</i>	<i>b</i>	<i>c</i>
8.	18	24	16
9.	20	14	25

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	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
1.	14	108	5. 15	27
2.	9	12	6. 118	22
3.	3	360	7. 71	14
4.	22	11		

	<i>a</i>	<i>b</i>	<i>c</i>
8.	28	13	18
9.	27	64	12

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	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{5}{2}$
2.	$\frac{2}{3}$	$\frac{1}{2}$	$\frac{3}{4}$	
3.	$1\frac{1}{6}$	$2\frac{2}{3}$	$3\frac{2}{5}$	
4.	$\frac{13}{4}$	$\frac{13}{2}$	$\frac{23}{6}$	
5.	$1\frac{3}{4}$	$3\frac{1}{3}$	$6\frac{1}{2}$	

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	a	b	c	d
1.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{1}{2}$
2.	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{12}{3}$	$\frac{3}{4}$
3.	$2\frac{1}{2}$	$1\frac{2}{5}$	$2\frac{1}{4}$	$5\frac{1}{3}$
4.	$\frac{3}{2}$	$\frac{15}{8}$	$\frac{14}{3}$	$\frac{35}{6}$
5.	$1\frac{4}{5}$	$2\frac{1}{4}$	$3\frac{1}{3}$	$6\frac{1}{2}$

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	a	b	c		a	b	c
1.	$\frac{6}{35}$	$\frac{21}{32}$	$\frac{18}{25}$	4.	$12\frac{4}{5}$	18	11
2.	$\frac{7}{12}$	$\frac{1}{3}$	$\frac{3}{8}$	5.	$5\frac{5}{6}$	$2\frac{7}{10}$	$3\frac{3}{4}$
3.	$2\frac{2}{3}$	$2\frac{1}{2}$	$6\frac{1}{4}$				

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	a	b	c		a	b	c
1.	$\frac{35}{48}$	$\frac{12}{35}$	$\frac{2}{15}$	4.	$9\frac{3}{5}$	$25\frac{1}{2}$	$3\frac{2}{3}$
2.	$\frac{5}{9}$	$\frac{1}{3}$	$\frac{3}{8}$	5.	$1\frac{1}{5}$	6	$2\frac{1}{2}$
3.	$4\frac{4}{5}$	$7\frac{1}{2}$	15	6.	$2\frac{2}{15}$	$8\frac{1}{3}$	$2\frac{7}{16}$

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	a	b	c	d
1.	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{7}{9}$	1
2.	$1\frac{1}{6}$	$1\frac{3}{8}$	$1\frac{1}{10}$	$\frac{17}{20}$
3.	$10\frac{3}{4}$	$7\frac{9}{10}$	$6\frac{1}{12}$	$6\frac{5}{6}$
4.	$5\frac{19}{24}$	$5\frac{19}{20}$	$1\frac{5}{12}$	$6\frac{5}{6}$
5.	$1\frac{5}{12}$	$9\frac{5}{8}$	$5\frac{1}{10}$	$10\frac{1}{2}$

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	a	b	c	d
1.	$\frac{2}{5}$	1	$1\frac{1}{2}$	$\frac{5}{7}$
2.	$\frac{7}{8}$	$1\frac{1}{20}$	$1\frac{3}{10}$	$1\frac{7}{12}$
3.	$6\frac{19}{30}$	$6\frac{8}{9}$	$3\frac{11}{12}$	$6\frac{3}{4}$
4.	$6\frac{9}{20}$	$6\frac{2}{15}$	$9\frac{11}{16}$	$16\frac{1}{2}$
5.	$7\frac{9}{20}$	$10\frac{29}{60}$	$48\frac{1}{2}$	$76\frac{3}{10}$

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	a	b	c	d
1.	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$
2.	$3\frac{3}{5}$	$1\frac{1}{3}$	$4\frac{5}{7}$	$2\frac{1}{2}$
3.	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{5}{9}$	$\frac{1}{8}$
4.	$\frac{1}{2}$	$\frac{23}{40}$	$\frac{1}{2}$	$\frac{1}{4}$
5.	$2\frac{1}{2}$	$2\frac{5}{24}$	$\frac{3}{10}$	$1\frac{3}{15}$

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	a	b	c	d
1.	$\frac{1}{5}$	$\frac{2}{15}$	$\frac{1}{8}$	$\frac{2}{3}$
2.	$\frac{1}{3}$	$\frac{1}{8}$	$\frac{2}{3}$	$\frac{1}{12}$
3.	$\frac{3}{8}$	$\frac{13}{18}$	$\frac{5}{8}$	$\frac{1}{6}$
4.	$3\frac{1}{2}$	$2\frac{1}{10}$	$5\frac{1}{6}$	$1\frac{1}{2}$
5.	$2\frac{1}{12}$	$2\frac{7}{8}$	$1\frac{1}{3}$	$\frac{9}{10}$

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1. line MN	4. $\angle$ TVX or $\angle$ XVT	7. b.
2. line segment PR	5. $\angle$ YDQ or $\angle$ QDY	8. d.
3. $\angle$ CAB or $\angle$ BAC	6. g.	9. a.

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1. line segment SR	4. $\angle$ MNL or $\angle$ LNM; 90°	7. f.	10. c.
2. line XY	5. $\angle$ TUV or $\angle$ VUT; 165°	8. d.	
3. $\angle$ BCD or $\angle$ DCB; 70°	6. c.	9. d.	

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	a	b	c	d
1.	93	170	1073	165504
2.	57	179	654	1272
3.	390	1323	6800	37800
4.	1036	3680	18600	213384
5.	16	123	355 r3	100 r38

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	a	b	c	d
6.	18 r2	62	34 r16	197 r6
7.	7	20 r6	33 r61	1316 r43
	a	b	a	b
8.	1800	3	11. 24	130
9.	21000	300000	12. 18 ; 18	260 ; 3600
10.	1	1960		

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	a	b	c	d	e
1.	93	162	933	128580	24207
2.	45	113	288	22151	66859
3.	438	992	3925	3870	13440
4.	972	2360	58473	81004	2079848
	a	b	c	d	
5.	13	116	414 r3	121 r11	
6.	19 r2	57 r3	20 r35	297 r37	

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	a	b	c	d
7.	7 r2	117 r2	26 r15	4590 r1
8.	3 r15	21	99 r17	409 r2
	a	b	a	b
9.	1600	6000	13. 72	5
10.	17000	9	14. 12	102
11.	9000	30000	15. 26 ; 40	12 ; 8
12.	3	5305		

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	a	b	c		a	b	c
16.	$\frac{1}{3}$	$\frac{4}{5}$	$4\frac{3}{8}$	19.	$\frac{8}{15}$	$1\frac{7}{8}$	9
17.	$6\frac{2}{3}$	$3\frac{1}{3}$	$10\frac{1}{3}$	20.	$2\frac{1}{2}$	10	$8\frac{1}{3}$
18.	$\frac{2}{15}$	$\frac{7}{24}$	$\frac{6}{35}$	21.	$3\frac{1}{2}$	62	10
	a	b	c	d			
22.	$\frac{4}{5}$	$\frac{5}{7}$	$\frac{3}{4}$	$\frac{3}{5}$			
23.	$3\frac{1}{2}$	$21\frac{1}{3}$	$1\frac{1}{10}$	$1\frac{1}{8}$			
24.	$1\frac{1}{6}$	$1\frac{17}{30}$	$9\frac{1}{2}$	$22\frac{5}{12}$			

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	a	b	c	d
25.	$\frac{2}{5}$	$6\frac{2}{5}$	$4\frac{1}{2}$	$4\frac{1}{4}$
26.	$\frac{5}{8}$	$\frac{11}{18}$	$1\frac{5}{24}$	$5\frac{1}{40}$
27.	$\frac{1}{6}$	$\frac{7}{30}$	$1\frac{11}{24}$	$2\frac{17}{20}$
28. line AB or line BA				31. pentagon
29. $\angle$ DEF or $\angle$ FED				32. quadrilateral
30. circle				33. triangle

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