

STUDENT HELP

**YOUR BUILT-IN
LEARNING SUPPORT**

► *Your textbook contains many special elements to help you learn. It provides several study helps that may be new to you. For example, every chapter begins with a Study Guide.*

Chapter Preview The Study Guide starts with a short description of what you will be learning.

Key Vocabulary This list highlights important new terms that will be introduced in the chapter as well as reviewing terms that you already know.

Skill Review These exercises review key skills that you'll apply in the chapter. They will help you identify any topics that you need to review.

Study Strategy The study strategies suggest ideas to help you better understand the math you are learning as well as help you prepare for tests.

CHAPTER 1

Study Guide

PREVIEW *What's the chapter about?*

Chapter 1 is an **introduction to algebra**. In Chapter 1 you'll learn to

- write and evaluate expressions.
- check solutions to equations and inequalities and use mental math.
- use verbal and algebraic models to represent real-life situations.
- organize data and represent functions.

KEY VOCABULARY

► New	• exponent, p. 9	• inequality, p. 26
• variable expression, p. 3	• base of a power, p. 9	• function, p. 46
• unit analysis, p. 5	• order of operations, p. 16	• input-output table, p. 46
• verbal model, p. 5	• equation, p. 24	• domain, p. 47
• power, p. 9	• solution of an equation, p. 24	• range, p. 47

PREPARE *Are you ready for the chapter?*

SKILL REVIEW Do these exercises to review key skills that you'll apply in this chapter. See the given **reference page** if there is something you don't understand.

Write the percent as a decimal and as a fraction or a mixed number in lowest terms. (Skills Review, pp. 784–785)

1. 60% 2. 33% 3. 0.08% 4. 150%

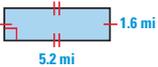
Complete the statement using > or <. (Skills Review, pp. 779–780)

5. $899 \underline{\quad} 901$ 6. $64.1 \underline{\quad} 64.03$ 7. $2050 \underline{\quad} 2005$ 8. $0.099 \underline{\quad} 0.01$

Find the area and perimeter of the figure. (Skills Review, pp. 790–791)

9. 

10. 

11. 

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► **Study Tip** "Student Help" boxes throughout the chapter give you study tips and tell you where to look for extra help in this book and on the Internet.

STUDY STRATEGY *Here's a study strategy!*

Keeping a Math Notebook

- Keep a notebook of math notes about each chapter, separate from your homework exercises. This will help you remember new concepts and skills.
- Review your notes each day before you start your next homework assignment.

Also, in every lesson you will find a variety of Student Help notes.

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In the Book

Study Tip The study tips will help you avoid common errors.

Skills Review Here you can find where to review skills you've studied in earlier math classes.

Look Back Here are references to material in earlier lessons that may help you understand the lesson.

Extra Practice Your book contains more exercises to practice the skills you are learning.

Homework Help Here you can find suggestions about which Examples may help you solve Exercises.



On the Internet

Homework Help: Extra Examples These are places where you can find additional examples on the Web site.

Homework Help: Problem Solving Help Here you can find additional suggestions for solving an exercise.

Keystroke Help These provide the exact keystroke sequences for many different kinds of calculators.

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Study Tip
In part (c) of Example 2, you do not perform the operations from left to right because division has a higher priority than addition and subtraction.

THE LEFT-TO-RIGHT RULE Operations that have the same priority, such as multiplication and division or addition and subtraction, are performed using the *left-to-right rule*, as shown in Example 2.

EXAMPLE 2 Using the Left-to-Right Rule

a. $24 - 8 - 6 = (24 - 8) - 6$ **Work from left to right.**
 $= 16 - 6$
 $= 10$

b. $15 \cdot 2 \div 6 = (15 \cdot 2) \div 6$ **Work from left to right.**
 $= 30 \div 6$
 $= 5$

c. $16 + 4 \div 2 - 3 = 16 + (4 \div 2) - 3$ **Divide first.**
 $= 16 + 2 - 3$
 $= (16 + 2) - 3$ **Work from left to right.**
 $= 18 - 3$
 $= 15$

ORDER OF OPERATIONS

1. First do operations that occur within grouping symbols.
2. Then evaluate powers.
3. Then do multiplications and divisions from left to right.
4. Finally, do additions and subtractions from left to right.

A fraction bar can act as a grouping symbol: $(1 + 2) \div (4 - 1) = \frac{1 + 2}{4 - 1}$

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EXERCISES
HOMEWORK HELP
Visit our Web site www.mcdougallittell.com for extra examples.

Skills Review
For help with writing fractions in lowest terms, see pp. 781–783.

EXAMPLE 3 Using a Fraction Bar

$$\frac{7 \cdot 4}{8 + 7^2 - 1} = \frac{7 \cdot 4}{8 + 49 - 1}$$
 Evaluate power.

$$= \frac{28}{8 + 49 - 1}$$
 Simplify the numerator.

$$= \frac{28}{57 - 1}$$
 Work from left to right.

$$= \frac{28}{56}$$
 Subtract.

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

1.3 Order of Operations

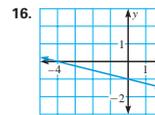
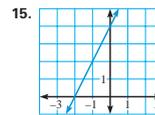
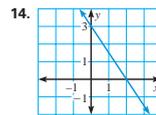
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PRACTICE AND APPLICATIONS

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Extra Practice
to help you master skills is on p. 800.

USING GRAPHS TO FIND INTERCEPTS Use the graph to find the *x*-intercept and the *y*-intercept of the line.



FINDING X-INTERCEPTS Find the *x*-intercept of the graph of the equation.

17. $x + 3y = 5$ 18. $x - 2y = 6$ 19. $2x + 2y = -10$
 20. $3x + 4y = 12$ 21. $5x - y = 45$ 22. $-x + 3y = 27$
 23. $-7x - 3y = 42$ 24. $2x + 6y = -24$ 25. $-12x - 20y = 60$

FINDING Y-INTERCEPTS Find the *y*-intercept of the graph of the equation.

26. $y = -2x + 5$ 27. $y = 3x - 4$ 28. $y = 8x + 27$
 29. $y = 7x - 15$ 30. $4x - 5y = -35$ 31. $6x - 9y = 72$
 32. $3x + 12y = -84$ 33. $-x + 1.7y = 5.1$ 34. $2x - 6y = -18$

USING INTERCEPTS Graph the line that has the given intercepts.

35. *x*-intercept: -2 36. *x*-intercept: 4 37. *x*-intercept: -7
y-intercept: 5 *y*-intercept: 6 *y*-intercept: -3
 38. *x*-intercept: -3 39. *x*-intercept: -12 40. *x*-intercept: -7
y-intercept: -7 *y*-intercept: -8 *y*-intercept: 15

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HOMEWORK HELP
Example 1: Exs. 17–34
Example 2: Exs. 35–55
Example 3: Exs. 44–55
Example 4: Exs. 60–63

4.3 Quick Graphs Using Intercepts

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