

**ENHANCEMENTS TO THE LIAL MyMathLab COURSES**

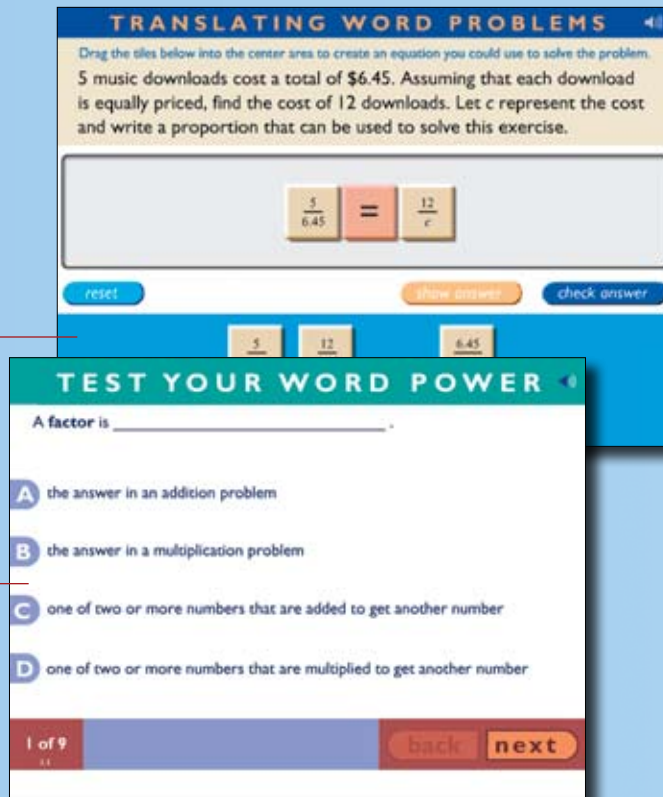
All video content from the following supplements:

- **Chapter Test Prep Video CD**, which provides step-by-step solutions to every problem in the Chapter Test
- **Videos on DVD**, which offer a complete lecture for every section of the textbook and solutions on video for select exercises from the text
- **Concept Videos**, which illustrate the most difficult math topics in a visually appealing and accessible manner

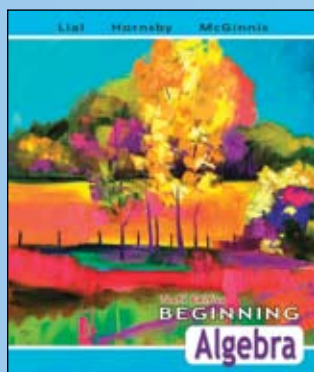
Optional English subtitles are available for all videos, with Spanish subtitles available for section lectures.

Other features:

- **Translating Word Problems** activities help students practice the translation step of solving word problems.
- **Interactive Test Your Word Power** exercises help students practice their vocabulary and correspond to the Test Your Word Power exercises from the text.
- An **Interactive English/Spanish glossary** contains the definitions for key terms in both English and Spanish.



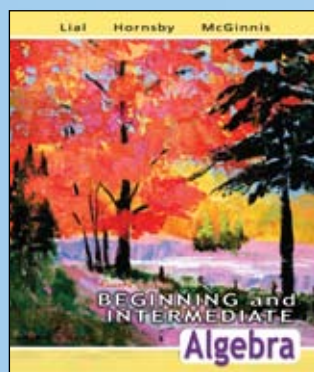
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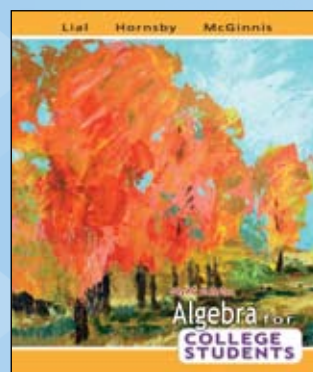
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## EXAMPLES THAT TEACH AND EXERCISES THAT PROMOTE UNDERSTANDING

**EXAMPLE 3** Deciding Whether Ordered Pairs Are Solutions of an Equation

Decide whether each ordered pair is a solution of the equation  $2x + 3y = 12$ .

(a) (3, 2)  
To see whether (3, 2) is a solution of the given equation  $2x + 3y = 12$ , substitute 3 for  $x$  and 2 for  $y$  in the equation.

$$2x + 3y = 12$$

$$2(3) + 3(2) \stackrel{?}{=} 12 \quad \text{Let } x = 3; \text{ let } y = 2.$$

$$6 + 6 \stackrel{?}{=} 12 \quad \text{Multiply.}$$

$$12 = 12 \quad \text{True}$$

This result is true, so (3, 2) is a solution of  $2x + 3y = 12$ .

(b) (-2, -7)  
Use parentheses to avoid errors.

$$2x + 3y = 12$$

$$2(-2) + 3(-7) \stackrel{?}{=} 12 \quad \text{Let } x = -2; \text{ let } y = -7.$$

$$-4 + (-21) \stackrel{?}{=} 12 \quad \text{Multiply.}$$

$$-25 = 12 \quad \text{False}$$

This result is false, so (-2, -7) is not a solution of  $2x + 3y = 12$ .

Work Problem 4 at the Side.

Margin exercises allow students to immediately practice the material covered in the examples before they begin their homework.

Examples have been made even more student-friendly with Pointers from the authors that provide on-the-spot reminders and warnings about common pitfalls.

5.4 Exercises

FOR EXTRA HELP MyMathLab PRACTICE WATCH DOWNLOAD READ REVIEW

1. Consider the square  $(2x + 3)^2$ .

(a) What is the square of the first term,  $(2x)^2$ ?

(b) What is twice the product of the two terms,  $2(2x)(3)$ ?

(c) What is the square of the last term,  $3^2$ ?

(d) Write the final product, which is a trinomial, using your results from parts (a)–(c).

2. Repeat Exercise 1 for the square  $(3x - 2)^2$ .

Find each square. See Examples 1 and 2.

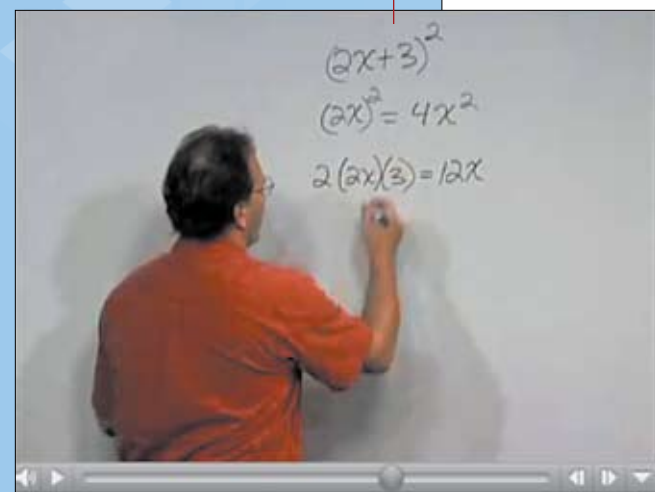
3.  $(p + 2)^2$       4.  $(r + 5)^2$       5.  $(z - 5)^2$       6.  $(x - 3)^2$

7.  $(4x - 3)^2$       8.  $(5y + 2)^2$       9.  $(2p + 5q)^2$       10.  $(8a - 3b)^2$

11.  $(0.8t + 0.7s)^2$       12.  $(0.7z - 0.3w)^2$       13.  $(5x + \frac{2}{5}y)^2$       14.  $(6m - \frac{4}{5}n)^2$

16.  $x(2x + 5)^2$       17.  $-(4r - 2)^2$       18.  $-(3y - 8)^2$

NEW! A built-in solutions manual in the back of the book offers completely worked-out solutions for select exercises.



NEW! The Videos on DVD show an instructor working through the complete solution to exercises marked with a DVD icon. The Videos on DVD also provide a complete lecture for each section of the text. Videos have optional subtitles in English. Spanish subtitles are also available for section lectures.

### Study Skills

#### TAKING LECTURE NOTES

Study the set of sample math notes below, and read the comments about them. Then try to incorporate the techniques into your own math note taking in class.

**OBJECTIVE**  
1 Identify and apply note taking strategies.

Always include the date and title of the day's lecture topic at the top of every page. Always begin a new day with a new page.

Note the definitions of base and exponent are written in parentheses—don't trust your memory!

Skipping lines makes the notes easier to read.

See how the direction word (simplify) is emphasized and explained.

A star marks an important concept. This is a warning to avoid future mistakes. Note the underlining, too, which highlights the importance.

Notice the two columns, which allow for the example and explanation to be close to you. Whenever you know you'll try a series of steps to try the two-column method, note the brackets and arrows which clearly show how the problem is set up to be simplified.

January 2 Exponents  
Exponents used to show repeated multiplication.  
 $3 \cdot 3 \cdot 3 \cdot 3$  can be written  $3^4$  (how many times it's multiplied) base (the number being multiplied)  
Read  $3^2$  as 3 to the 2nd power or 3 squared.  
 $3^3$  as 3 to the 3rd power or 3 cubed.  
 $3^4$  as 3 to the 4th power, etc.  
Simplifying an expression with exponents actually do the repeated multiplication.  
 $2^3$  means  $2 \cdot 2 \cdot 2$  and  $2 \cdot 2 \cdot 2 = 8$

**Quick Review**

Concepts

4.1 Solving Systems of Linear Equations by Graphing

An ordered pair is a solution of a system if it makes all equations of the system true at the same time.

If the graphs of the equations of a system are both sketched on the same axes, then the points of intersection, if any, are solutions of the system.

If the graphs of the equations do not intersect (that is, the lines are parallel), then the system has no solution and the solution set is  $\emptyset$ .

If the graphs of the equations are the same line, then the system has an infinite number of solutions. Use set-builder notation to write the solution set:  $\{(x, y) | \dots\}$ .

Examples

Is (4, -1) a solution of the system  $x + y = 3$  and  $2x - y = 9$ ?

Because  $4 + (-1) = 3$  and  $2(4) - (-1) = 9$  are both true, (4, -1) is a solution.

Solve by graphing.

$$x + y = 5$$

$$2x - y = 4$$

The ordered pair (3, 2) satisfies both equations, so (3, 2) is the solution set.

4.2 Solving Systems of Linear Equations by Substitution

Step 1 Solve one equation for either variable.

Solve by substitution.

$$x + 2y = -5 \quad (1)$$

$$y = -2x - 1 \quad (2)$$

Equation (2) is already solved for  $y$ . Substitute  $-2x - 1$  for  $y$  in equation (1).

$$x + 2(-2x - 1) = -5$$

$$x - 4x - 2 = -5$$

$$-3x - 2 = -5$$

$$-3x = -3$$

$$x = 1$$

To find  $y$ , let  $x = 1$  in equation (2):

$$y = -2(1) - 1 = -3.$$

The solution (1, -3) checks.

Step 2 Substitute for that variable in the other equation to get an equation in one variable.

Step 3 Solve the equation from Step 2.

Step 4 Substitute the result into the equation from Step 1 to get the value of the other variable.

Step 5 Check. Write the solution set.

4.3 Solving Systems of Linear Equations by Elimination

Step 1 Write both equations in standard form  $Ax + By = C$ .

Solve by elimination.

$$x + 3y = 4$$

$$3x - 2y = 1$$

Multiply equation (1) by

## STUDY SKILLS SUPPORT

Study Skills Activities are integrated throughout the text, and can be used in the classroom or assigned as homework to help your students develop skills such as taking notes, preparing for tests, and creating study cards.

## END-OF-CHAPTER REVIEW

The chapter summary material provides students with ample opportunity for review. At the end of each chapter, students will find the following resources and more:

- Key Terms
- Chapter Review Exercises keyed to individual sections
- New Symbols
- Mixed Review Exercises
- Test Your Word Power
- Chapter Test
- Quick Review

Chapter 3 Test

Use the Chapter Test Prep Video CD to see fully worked-out solutions to any of the exercises you want to review.

The line graph shows the overall unemployment rate in the U.S. civilian labor force for the years 1998 through 2005. Use the graph to work Exercises 1–3.

**Unemployment Rate**

Source: U.S. Department of Labor.

1. Between which pairs of consecutive years did the unemployment rate decrease?

2. What was the general trend in the unemployment rate between 2000 and 2003?

3. Estimate the overall unemployment rate in 2003 and 2004. About how much did the unemployment rate decline between 2003 and 2004?

Graph each linear equation. Give the  $x$ - and  $y$ -intercepts.

4.  $3x + y = 6$

CHAPTER Test Prep VIDEO CD

The Chapter Test Prep Video CD provides step-by-step solutions

to every new problem in the Chapter Test, and is included with every copy of the book. These videos provide guidance and support when students need the most help: the night before an exam. All videos include optional subtitles in English.

INTRODUCTORY ALGEBRA Ninth Edition LIAL, HORNBY, MCGINNIS

Chapter 2 - Equations, Inequalities, and Applications

Solve the equation and check the solution.

$$2 - 3(x - 5) = 3 + (x + 1)$$

$$2 - 3x + 15 = x + 4$$

$$-3x + 17 = x + 4$$

$$-4x = -13$$

$$x = \frac{13}{4}$$

As a last step divide both sides by negative 4 to get  $x$  is equal to  $\frac{13}{4}$ .