

Name _____

Date _____

LESSON
3.1

Practice B

For use with pages 132–140

Solve the equation.

1. $x + 16 = 25$

2. $n - 9 = 17$

3. $-30 = w + 8$

4. $y + 5 = -13$

5. $a - 17 = -10$

6. $41 = 52 + m$

7. $c - 2.4 = 1.8$

8. $z + 4.1 = 9.6$

9. $-3.2 = 4.5 + p$

10. $9x = 54$

11. $-5b = 55$

12. $-42 = 3m$

13. $-52 = -4y$

14. $\frac{1}{3}n = 36$

15. $-\frac{3}{4}a = 12$

16. $0.5y = 17$

17. $-1.4a = 2.8$

18. $-6.5 = -1.3m$

Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

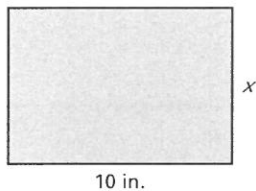
Name _____

Date _____

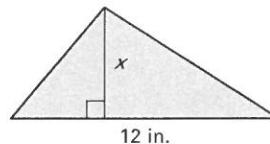
LESSON 3.1 Practice B *continued*
For use with pages 132–140

The rectangle or triangle has area A . Write and solve an equation to find the value of x .

19. $A = 70 \text{ in.}^2$

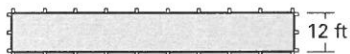


20. $A = 30 \text{ in.}^2$



21. **Caves** Cumberland Caverns in Tennessee is 44.4 kilometers long. This cave is 10.9 kilometers longer than Carlsbad Caverns in New Mexico. How long is Carlsbad Caverns?

22. **Bocce** Bocce is a lawn bowling game that originated in Italy. The bocce court below has an area of 1032 square feet. The width of the court is 12 feet. What is the length of the court?



23. **Speedskating** In the 2002 Winter Olympics, Cartriona LeMay Doan won the 500-meter race. Her winning time was 74.75 seconds. Find her average speed to the nearest tenth of a meter per second.

24. **Part-Time Job** You work at a grocery store part-time. You estimate that you spend $\frac{3}{5}$ of your time stocking shelves. You work 20 hours each week. How many hours of your work week do you spend stocking shelves?

Name _____

Date _____

LESSON
3.2

Practice B

For use with pages 141–146

Solve the equation.

1. $3n + 14 = 35$

2. $7y - 10 = 11$

3. $14 = 9 - x$

4. $9c - 5 = 13$

5. $4.6 = 4m - 3.4$

6. $1.2 = 2.4 - 3b$

7. $\frac{p}{6} + 9 = 14$

8. $\frac{w}{7} - 2 = 9$

9. $\frac{z}{3} - 8 = -4$

Write an equation for the function described. Then find the input.

10. The output of a function is 5 more than 2 times the input. Find the input when the output is 17.
11. The output of a function is 10 more than 4 times the input. Find the input when the output is -26 .
12. The output of a function is 14 less than 6 times the input. Find the input when the output is 22.

Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

Name _____

Date _____

LESSON
3.2**Practice B** *continued*
*For use with pages 141–146***Solve the equation.**

13. $9a + 4a = 26$

14. $14y - 6y = 48$

15. $38 = 26x - 7x$

16. $16x - 3x = -52$

17. $-9 = 11m - 8m$

18. $4.5z - 2.5z = 24$

19. **Yoga Class** A fitness center offers yoga classes for \$10 per class and sells yoga mats for \$19.95. A person paid a total of \$139.95 to the fitness center for yoga classes and a mat. Find the number of yoga classes the person took.

20. **Library Books** Your school has a \$1200 grant to buy books and magazine subscriptions for the school library. The average cost of a magazine subscription is \$30. Your school decides to spend \$870 on books and the remaining amount on magazine subscriptions. How many magazine subscriptions can the school buy?

21. **Walking** You have already walked 5 miles of an 18-mile trail. If you walk the rest of the trail at a pace of 1 mile in 17 minutes, how many hours will it take you to finish the trail? Use the following verbal model to answer the question. Round your answer to the nearest tenth.

Walking rate (mi/min)	·	Number of minutes (min)	+	Number of miles already walked (mi)	=	Total number of miles walked (mi)
--------------------------	---	----------------------------	---	--	---	--------------------------------------

22. **Swimming Pool** The capacity of a small children's swimming pool is 106 gallons of water. There are currently 15 gallons of water in the pool. You are filling the pool with water at a rate of 2 gallons per minute.

a. Write an equation that gives the amount y (in gallons) of water in the pool as a function of the number x of minutes from now.

b. After how many minutes will the pool be full?

Name _____

Date _____

LESSON
3.3**Practice B***For use with pages 148–153***Solve the equation.**

1. $16x - 15 - 9x = 13$

2. $15m + 4 - 9m = -32$

3. $3b - 9 - 8b = 11$

4. $-31 = 8 - 6p - 7p$

5. $9 + 4(x + 1) = 25$

6. $7(d - 5) + 12 = 5$

7. $10a + 5(a - 3) = 15$

8. $19a - 3(a - 6) = 66$

9. $\frac{1}{4}(x - 8) = 7$

10. $\frac{1}{3}(d + 9) = -12$

11. $\frac{3}{4}(n + 3) = 9$

12. $-\frac{5}{2}(w - 1) = 15$

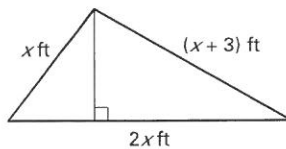
13. $6.4 + 2.1(z - 2) = 8.5$

14. $4.5 - 1.5(6m + 2) = 6$

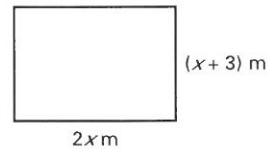
15. $15 = 4.3n - 2.1(n - 4)$

Find the value of x for the triangle or rectangle.

16. Perimeter = 23 feet



17. Perimeter = 24 meters



Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

Name _____

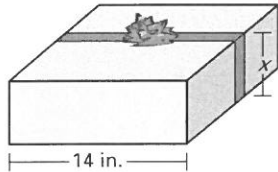
Date _____

LESSON
3.3

Practice B *continued*

For use with pages 148–153

- 18. Wrapping a Package** It takes 70 inches of ribbon to make a bow and wrap the ribbon around a box. The bow takes 32 inches of ribbon. The width of the box is 14 inches. What is the height of the box?



- 19. Vacation** You are driving to a vacation spot that is 1500 miles away. Including rest stops, it takes you 42 hours to get to the vacation spot. You estimate that you drove at an average speed of 50 miles per hour. How many hours were you *not* driving?
- 20. Moving** You helped a friend move a short distance recently. The friend rented a truck for \$15 an hour and rented a dolly for \$5. Your friend paid a total of \$80 for the rental. For how long did your friend rent the truck?
- 21. Painting** You and your friend are painting the walls in your apartment. You estimate that there is 1000 square feet of space to be painted. You paint at a rate of 4 square feet per minute and your friend paints at a rate of 3 square feet per minute. Your friend shows up to help you paint 45 minutes after you have already started painting.
- Write an equation that gives the total number of square feet y as a function of the number of minutes x it takes to paint all of the walls.
 - How long will it take you and your friend to finish painting? Round your answer to the nearest minute.

Name _____

Date _____

LESSON
3.4

Practice B

For use with pages 154–160

Solve the equation and describe each step you use.

1. $5x + 11 = 4x + 18$

2. $11p - 4 = 6p + 1$

3. $-6 = 2(w + 5)$

Solve the equation, if possible.

4. $15x - 8 = 14x + 13$

5. $9n - 7 = 5n + 5$

6. $4z - 15 = 4z + 11$

7. $-7a + 9 = 3a + 49$

8. $4(w + 3) = w - 15$

9. $8(y - 5) = 6y - 18$

10. $14m - 10 = 3(4 + m)$

11. $7 + x = \frac{1}{2}(4x - 2)$

12. $8b + 11 - 3b = 2b + 2$

13. $10d - 6 = 4d - 15 - 3d$

14. $16p - 4 = 4(2p - 3)$

15. $0.25(8z - 4) = z + 8 - 2z$

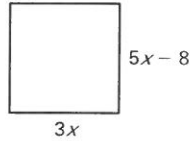
Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

Name _____

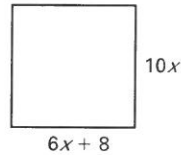
Date _____

LESSON
3.4**Practice B** *continued*
*For use with pages 154–160***Find the perimeter of the square.**

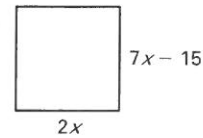
16.



17.



18.



- 19. Saving and Spending** Currently, you have \$80 and your sister has \$145. You decide to save \$6 of your allowance each week, while your sister decides to spend her whole allowance plus \$7 each week. How long will it be before you have as much money as your sister?
- 20. Botanical Gardens** The membership fee for joining a gardening association is \$24 per year. A local botanical garden charges members of the gardening association \$3 for admission to the garden. Nonmembers of the association are charged \$6. After how many visits to the garden is the total cost for members, including the membership fee, the same as the total cost for nonmembers?
- 21. College Enrollment** Information about students' choices of majors at a small college is shown in the table. In how many years will there be 2 times as many students majoring in engineering than in business? In how many years will there be 2 times as many students majoring in engineering than in biology?

Major	Number of students enrolled in major	Average rate of change
Engineering	120	22 more students each year
Business	105	4 fewer students each year
Biology	98	6 more students each year

Name _____

Date _____

LESSON
3.5

Practice B

For use with pages 162–167

Tell whether the ratio is in simplest form. If not, write it in simplest form.

1. 16 to 34

2. 17:65

3. $\frac{33}{108}$

Solve the proportion.

4. $\frac{1}{2} = \frac{p}{14}$

5. $\frac{2}{3} = \frac{x}{21}$

6. $\frac{14}{8} = \frac{y}{20}$

7. $\frac{y}{6} = \frac{15}{9}$

8. $\frac{10}{15} = \frac{m}{39}$

9. $\frac{b}{8} = \frac{50}{20}$

10. $\frac{8}{2.5} = \frac{d}{0.5}$

11. $\frac{1.4}{1.6} = \frac{z}{10}$

12. $\frac{n}{4} = \frac{0.3}{1.5}$

Write the sentence as a proportion. Then solve the proportion.

13. 5 is to 12 as x is to 48.

14. w is to 9 as 7 is to 36.

15. d is to 4 as 32 is to 56.

16. 22 is to 50 as x is to 500.

17. 10 is to 45 as b is to 225.

18. n is to 18 as 64 is to 72.

Name _____

Date _____

LESSON
3.5

Practice B *continued*
For use with pages 162–167

19. Books Over the summer, you read 20 books. Eight of these books were biographies.

- a. Find the ratio of biographies to the total number of books.

- b. Find the ratio of non-biographies to biographies.

- c. Find the ratio of non-biographies to the total number of books.

20. Fitness Center The table shows the number of people attending classes at a fitness center during a recent evening.

Class	Aerobics	Spinning	Yoga
Number of people	32	28	16

- a. Find the ratio of the number of people taking yoga to the number of people taking spinning class.

 - b. Find the ratio of the number of people taking aerobics to the total number of people taking classes.
- 21. Mailroom** You work in the local mailroom at a college. One of your duties is to sort local mail from all of the other mail. You can sort 8 pieces of mail in 10 seconds. How many pieces of mail should you be able to sort in 45 minutes?
- 22. Music** A music downloading website reports that nearly 5 out of every 7 songs downloaded are classified as pop music. According to this information, predict how many of the next 500 songs downloaded will be pop songs. Round your answer to the nearest whole number.

Name _____

Date _____

LESSON
3.6**Practice B***For use with pages 168–173***Name the cross products of the proportion.**

1. $\frac{n}{11} = \frac{40}{55}$

2. $\frac{4}{9} = \frac{1}{x}$

3. $\frac{1.8}{1.9} = \frac{b}{3.8}$

4. $\frac{a+6}{21} = \frac{4}{7}$

5. $\frac{5x}{x+1} = \frac{30}{9}$

6. $\frac{2.2}{3.3} = \frac{a-2}{a-1}$

Solve the proportion.

7. $\frac{3}{5} = \frac{21}{m}$

8. $\frac{12}{7} = \frac{60}{d}$

9. $\frac{24}{x} = \frac{48}{60}$

10. $\frac{5}{7} = \frac{3w}{21}$

11. $\frac{2w}{16} = \frac{30}{80}$

12. $\frac{2z}{24} = \frac{6}{8}$

13. $\frac{8}{9} = \frac{30+a}{45}$

14. $\frac{9-y}{44} = \frac{5}{22}$

15. $\frac{26}{15} = \frac{104}{70-w}$

16. $\frac{35}{16} = \frac{c-8}{2}$

17. $\frac{1}{9} = \frac{a}{a+24}$

18. $\frac{2}{n} = \frac{14}{n+30}$

Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

Name _____

Date _____

LESSON
3.6

Practice B *continued*
For use with pages 168–173

A map has a scale of 1 in. : 38 ft. Use the given map distance to find the actual distance.

19. 5.5 in.

20. 2.25 in.

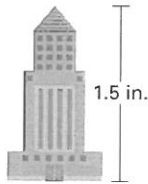
21. 1.75 in.

22. Concrete You are making up your own mix of concrete to patch a set of stairs. In order to have the proper mix, you need to mix 1 part of Portland cement with 2 parts of sand and 3 parts of gravel.

a. How many total parts are in one batch of concrete?

b. You make a mix with 4 parts of sand. How many total parts of cement, sand, and gravel are in your mix?

23. Architectural Firm An architectural firm makes a model of a science center they are building. The ratio of the model to the actual size is 1 in. : 85 ft. Estimate the height of the building if the model is 1.5 inches tall.



24. Tall Buildings You made a model of the Space Needle in Seattle, Washington, for a report on architecture in the United States. You used a scale of 1 in. : 50 ft. Your model is 12.1 inches tall. Estimate the actual height of the Space Needle.

Name _____

Date _____

LESSON
3.7

Practice B

For use with pages 176–181

Use a proportion to answer the question.

1. What percent of 125 is 25?
2. What percent of 70 is 14?
3. What number is 15% of 80?
4. What number is 65% of 180?
5. 3 is 2% of what number?
6. 384 is 64% of what number?

Use the percent equation to answer the question.

7. What percent of 64 is 16?
8. What percent of 160 is 128?
9. What number is 12% of 225?
10. What number is 85% of 360?
11. 4.8 is 8% of what number?
12. 25.8 is 86% of what number?

Find the percent. Round your answer to the nearest whole percent when necessary.

13. \$6 tip for a \$40 dinner
14. \$8.10 tax on an item priced at \$135
15. 46 musicians out of 230 people
16. 18 action movies out of 45 movies

Name _____

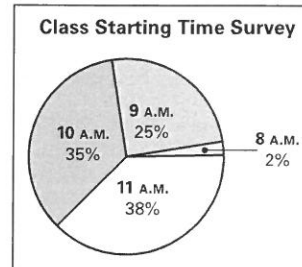
Date _____

LESSON
3.7

Practice B *continued*

For use with pages 176–181

- 17. Antarctica** Antarctica comprises about 10.5% of the total land area on Earth. Antarctica has a surface area of about 5,400,000 square miles. What is the total land area on Earth?
- 18. Part-Time Job** So far this week, you have worked 10 hours at your part-time job. This is 80% of the number of hours you work each week. How many hours do you work each week?
- 19. Class Times** The circle graph shows the results of a survey in which 500 college students were asked which time they preferred to start classes for the day.



- a. How many students who participated in the survey want to start classes at 8 A.M.?
- b. How many students who participated in the survey want to start classes at 9 A.M.?
- c. How many students who participated in the survey want to start classes at either 10 or 11 A.M.?
- 20. Boots** Last year you bought a pair of designer boots on sale for \$84. Your friend bought the same boots this year for \$120. Which statements are correct?
- a. You paid 30% less than your friend paid.
- b. Your friend paid 50% more than you did.
- c. You paid 70% of what your friend paid.

Name _____

Date _____

LESSON
3.8

Practice B

For use with pages 184–189

Write the equation in function form.

1. $4x + y = -10$

2. $6 - y = 17x$

3. $y - 3x - 11 = 0$

4. $2x + 2y = 8$

5. $6x - 3y = 12$

6. $16 - 8y = 4x$

7. $5x - 7y = 14$

8. $9y - 4x - 9 = 0$

9. $15 + 3y = -24x$

10. $4 + 6y = 12x - 2$

11. $4 - 10y = 22 - 6x$

12. $8x - 2y - 5 = 11$

Solve the literal equation.

13. Solve $R = R_1 + R_2$ for R_2 .

14. Solve $I = Prt$ for r .

15. Solve $C = \frac{Q}{V}$ for V .

16. Solve $y = mx + b$ for m .

Solve the formula for the indicated variable.

17. Area of a trapezoid: $A = \frac{h}{2}(b_1 + b_2)$. Solve for h .

18. Area of a rhombus: $A = \frac{1}{2}d_1d_2$. Solve for d_1 .

Name _____

Date _____

LESSON
3.8

Practice B *continued*
For use with pages 184–189

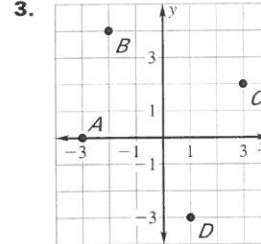
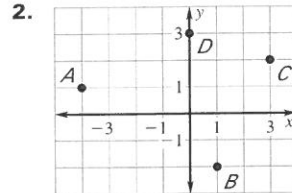
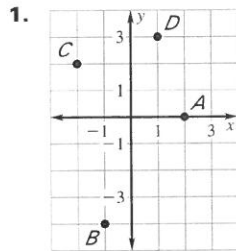
- 19. Guitar Practice** You practice playing your guitar every day. You spend 15 minutes practicing chords and the rest of the time practicing a new song. So the total number of minutes y you practice for the week is given by $y = 7(15 + x)$, where x is the number of minutes you spend on practicing a new song.
- Solve the equation for x .
 - How many minutes did you spend on a new song if you practiced 210 minutes last week? 245 minutes? 315 minutes?
- 20. Discounts** Solve for r in the formula $S = L - rL$ where S is the sale price, L is the list price, and r is the discount rate.
- An item with a list price of \$128 goes on sale for \$51.20. Find the discount rate.
 - An item with a list price of \$56.80 goes on sale for \$36.92. Find the discount rate.
- 21. Cookbook** You bought a cookbook while on a recent trip overseas. All of the oven temperatures are in degrees Celsius and the only formula you can remember for temperature is how to convert Fahrenheit to Celsius: $C = \frac{5}{9}(F - 32)$.
- Solve the equation for F .
 - A recipe tells you to bake a pie in the oven at 149°C . What is this temperature in degrees Fahrenheit? Round your answer to the nearest whole degree.

Name _____

Date _____

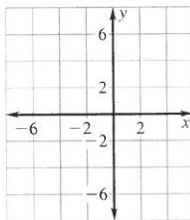
LESSON
4.1 **Practice B**
For use with pages 206–212

Give the coordinates of the points labeled *A*, *B*, *C*, and *D*.

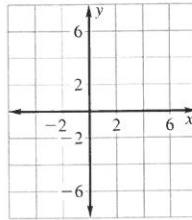


Plot the point in a coordinate plane. Describe the location of the point.

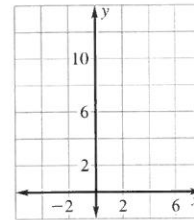
4. $A(-4, 3)$



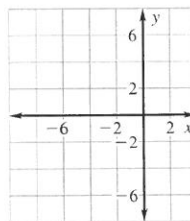
5. $P(5, -6)$



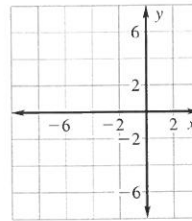
6. $Q(0, 7)$



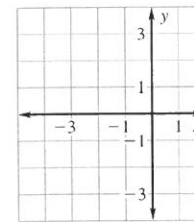
7. $B(-7, -5)$



8. $W(-5, 0)$



9. $V(-3, -3)$



Copyright © by McDougal Littell, a division of Houghton Mifflin Company.

