

Name _____

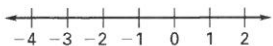
Date _____

LESSON
2.1**Practice B**

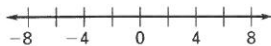
For use with pages 64–70

Graph the numbers on a number line. Then order the numbers from least to greatest.

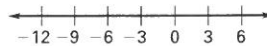
1. 2, -3, and 0



2. -5, 7, and -8



3. -9, -12, and 6



Tell whether each number in the list is a whole number, an integer, or a rational number. Then order the numbers from least to greatest.

4. -1.9 , $\frac{3}{4}$, 0.8 , -3

5. 1.3 , -2 , $\frac{1}{2}$, 0

6. 2.5 , $-\frac{7}{8}$, -0.5 , $\frac{1}{3}$

For the given value of a , find $-a$ and $|a|$.

7. $a = 10.2$

8. $a = -14$

9. $a = \frac{1}{2}$

Identify the hypothesis and conclusion of the conditional statement. Tell whether the statement is *true* or *false*. If it is *false*, give a counterexample.

10. If a number is negative, then its opposite is positive.

11. If a number is even, then its opposite is a whole number.

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LESSON
2.1**Practice B** *continued*
*For use with pages 64–70***Evaluate the expression when $x = -2.5$.**

12. $-x$

13. $|x| + 3$

14. $|x| - 4$

15. **Fairbanks, Alaska** The table shows the monthly normal temperatures in Fairbanks, Alaska, during the winter months. Which monthly temperature is the lowest? Which months had temperatures below -5°F ?

Month	December	January	February	March
Temperature ($^{\circ}\text{F}$)	-7°	-10°	-4°	11°

16. **Stock Market** The gains and losses of a stock for a week are shown in the table. Which day showed the greatest gain? Which day showed the greatest loss?

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Gain or loss	+0.02	-0.05	-0.12	-0.08	-0.01

17. **Class Enrollment** The table shows the growth in enrollment of the senior class at a high school between 1999 and 2004. Which year showed the greatest increase in class size? Which year showed the greatest decrease in class size?

Year	1999	2000	2001	2002	2003	2004
Increase	15	22	-7	-12	10	18

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LESSON
2.2

Practice B

For use with pages 73–79

Use a number line to find the sum.

1. $-8 + 9$

2. $13 + (-4)$

3. $-5 + (-11)$

4. $-6 + (-7)$

5. $-15 + 6$

6. $-21 + 10$

Find the sum.

7. $-4.2 + 6.5$

8. $14.2 + (-9.1)$

9. $7.8 + (-3.9)$

10. $2\frac{2}{3} + (-1\frac{1}{3})$

11. $-7\frac{1}{2} + 10\frac{3}{4}$

12. $8\frac{2}{3} + (-9\frac{1}{6})$

13. $-10 + (-23) + 18$

14. $-1.25 + 2.5 + 3.5$

15. $-2.6 + 7.5 + 5.6$

Evaluate the expression for the given value of x .

16. $6 + x + (-11); x = 8$

17. $-14 + x + 14; x = 9$

18. $2.2 + x + (-3.4); x = -2.5$

19. $-4.3 + (-x) + 1.5; x = 3.1$

20. $-2.8 + (-x) + 8.1; x = -3.6$

21. $-6.8 + |x| + 2.6; x = -3.2$

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LESSON
2.2

Practice B *continued*
For use with pages 73–79

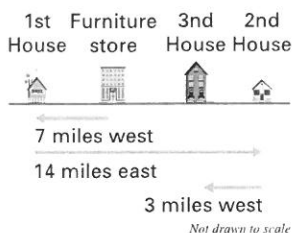
Solve the equation.

22. $x + 15 + (-15) = 6$

23. $6 + x + (-3) = 0$

24. $x + (-2.5) + 6.8 = 0$

25. **Delivery Driver** A furniture delivery driver is given three deliveries for the morning. The first delivery is 7 miles west of the furniture store. The second delivery is 14 miles east of the first house, and the last delivery before lunch is 3 miles west of the second house. How far is the delivery driver from the store after the last delivery?



26. **Homework** Your history teacher gives you an extra credit question on each homework assignment. You've been keeping track of how many points you are above or below the number of regular points you can earn on each assignment. How many total points do you have if there are 125 regular homework points for the five assignments?

Assignment	1	2	3	4	5
Number of points above and below	-2	4	-1	5	-3

27. **Company Profits** The table shows the profits earned by a small company during the first six months of the year. Did the company make a positive profit for the first six months? If so, how much?

Month	January	February	March	April	May	June
Profit	\$1500	-\$2000	\$1000	\$3000	-\$2000	-\$1000

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LESSON
2.3**Practice B**
*For use with pages 80–85***Find the difference.**

1. $12 - (-7)$

2. $22 - (-28)$

3. $-6 - (-13)$

4. $-15 - (-9)$

5. $5.8 - (-7.9)$

6. $-4.1 - (-3.6)$

7. $-6.2 - (-3.6)$

8. $3.8 - (-5.9)$

9. $-2.6 - (-10.2)$

10. $\frac{1}{3} - \frac{4}{9}$

11. $\frac{1}{2} - \left(-\frac{7}{8}\right)$

12. $-\frac{2}{3} - \left(-\frac{3}{8}\right)$

Evaluate the expression when $x = -6.4$ and $y = 10.8$.

13. $y - x$

14. $x - (-y)$

15. $x - y$

16. $-y - x$

17. $x - y - 2.6$

18. $y - 5.4 - x$

19. $-7.3 - x + y$

20. $6.4 + y - x$

21. $10.8 - x - y$

22. $y - (-x) + 6.4$

23. $7.2 + y - x$

24. $4.25 - x - y$

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LESSON
2.4

Practice B

For use with pages 87–93

Find the product.

1. $10(-9)$

2. $-12(-3)$

3. $-11(7)$

4. $2.6(-8)$

5. $-3.2(15)$

6. $-9.5(5)$

7. $-\frac{1}{2}(28)$

8. $-\frac{2}{3}(-21)$

9. $\frac{4}{5}(-20)$

10. $-6(4)(-3.5)$

11. $-2.1(-10)(-5)$

12. $-6.5(21)(-6)$

Identify the property illustrated.

13. $5.6 \cdot (-3.2) = -3.2 \cdot 5.6$

14. $0 \cdot 2.1 = 0$

15. $-1 \cdot (-1.5) = 1.5$

Find the product. Justify your steps.

16. $-3(-5)(-4x)$

17. $-\frac{3}{4}(-20)(7y)$

18. $8x(4.2)(-5)$

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LESSON
2.4**Practice B** *continued*
*For use with pages 87–93***Evaluate the expression when $x = -3$ and $y = 4.1$.**

19. $x + 2y$

20. $y - 4x$

21. $5.2x - y$

22. $xy - 10.1$

23. $14.3 - xy$

24. $3x - |y|$

25. **Death Valley** The lowest point in North America is Death Valley, California. Its elevation is at -86 meters. What is this elevation in feet? *Hint:* Use the fact that $1 \text{ meter} \approx 3.281 \text{ feet}$.

26. **Lava Flow** A kind of lava, block lava, is moving away from the base of a volcano at a rate of 1.5 meters per day. If the lava continues to flow at this rate, how far away has the lava flowed from the base of the volcano in 30 days?

27. **Snow Melt** After a recent snowfall, the snow on the ground in a shaded area is melting at a rate of 0.01 inch per minute. Currently, there are 4 inches of snow on the ground. If the snow continues melting at this rate, how much snow will be on the ground in 6 hours? How much snow has melted?

28. **City Population** In 1990 , the population of the Pittsburgh, Pennsylvania area was 1679 thousand people. The table shows the average rate of change in the population for two periods of time. Find the total population in 2000 and 2002 .

Time period	Rate of change (thousand people/yr)
1990–2000	-3.7
2000–2002	-6.5

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LESSON
2.5 **Practice B**
For use with pages 96–101

Use the distributive property to write an equivalent expression.

1. $5(x + 11)$

2. $3(x - 12)$

3. $-4(x + 8)$

4. $9(2x + 1)$

5. $(x - 7)(-10)$

6. $(4x + 3)5$

7. $x(4x - 1)$

8. $2x(x - 1)$

9. $-x(5x + 2)$

Identify the terms, like terms, coefficients, and constant terms of the expression.

10. $-8 + 2x + 5 + 11x$

11. $4x^2 + 1 - 3x^2 + 5$

12. $7y^2 - 6 + 3y^2 - 15$

13. $3xy + 5 - 2xy + 10$

Simplify the expression.

14. $6 + 10x + 3$

15. $2(3x + 1) + 4x$

16. $6(5 - x) + 12x$

17. $7(x - 1) - 5$

18. $8x + 3(2x - 1)$

19. $-2(x + 4) - 3$

20. $11x - (x + 7)$

21. $9 - 2(x - 4)$

22. $7x - 3(4 - 2x)$

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LESSON
2.5**Practice B** *continued*
For use with pages 96–101

23. Curtains You are making curtains by alternating strips of solid colored fabric and patterned fabric. The solid colored fabric costs \$.99 per strip and the patterned fabric costs \$1.25 per strip. You need 7 strips for one curtain. Write an equation that gives the total cost c as a function of the number n of solid colored strips used. Then find the total cost if you use 3 solid colored strips.

24. Shoe Boxes A department store is selling its plastic shoe boxes for \$1.50 off the regular price of a shoe box. You buy 4 shoe boxes. Write an equation that gives the total cost t as a function of the regular cost r of a shoe box. Then find the total cost if the boxes regularly cost \$3.59 each.

25. Delivering Papers You and your friend share a paper route. You can deliver 4 papers in one minute and your friend can deliver 3 papers in one minute. Seventy-five papers have to be delivered each day on the route. Let n be the number of papers you deliver.

- a. Use the verbal model to write an equation that you can use to find out how long it will take the both of you together to deliver the papers.

Total amount of time (min)	=	Your rate (min/paper)	•	Number of papers you deliver (papers)	+	Friend's rate (min/papers)	•	Number of papers friend delivers (papers)
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- b. How long will it take the both of you to deliver the papers if you deliver 38 papers? 50 papers?

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LESSON
2.6**Practice B***For use with pages 103–108***Find the multiplicative inverse of the number.**

1. -7

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

3. $-\frac{7}{8}$

Find the quotient.

4. $-32 \div (-2)$

5. $-1 \div \left(-\frac{6}{5}\right)$

6. $14 \div \left(-\frac{2}{7}\right)$

7. $17 \div \left(-2\frac{1}{8}\right)$

8. $-\frac{3}{4} \div 4$

9. $-\frac{1}{3} \div \frac{1}{5}$

10. $-\frac{1}{9} \div (-8)$

11. $-\frac{6}{11} \div (-3)$

12. $\frac{5}{8} \div \left(-2\frac{1}{2}\right)$

Find the mean of the numbers.

13. $1, -3, -10$

14. $-15, 4, -22$

15. $-7.5, 3, -6.5$

Simplify the expression.

16. $\frac{-8x + 27}{9}$

17. $\frac{15x - 5}{-5}$

18. $\frac{12x - 20}{-4}$

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LESSON
2.6**Practice B** *continued*
For use with pages 103–108

- 19. Melting Point** The melting point of the element fluorine is -219.62°C . The melting point of the element bromine is -7.2°C . How many times lower is the melting point of fluorine than the melting point of bromine? Round your answer to the nearest tenth.
- 20. Website Traffic** During a 3-month period, the traffic to a website dropped by 126,000 visitors. Find the average rate of change in the traffic to the website (in visitors per month) over the 3-month period.
- 21. Average Velocity** The velocity of an object indicates the object's speed and the direction in which the object is traveling. A negative velocity indicates that the object is moving downward or backward. A hawk is diving downward at a rate of 50 feet in 28 seconds. Find the hawk's average velocity (in feet per second). Round your answer to the nearest tenth.
- 22. Health Club** The table below shows change in the number of memberships at a health club. What is the average change in the number of memberships (in members per month)?

Month	Nov.	Dec.	Jan.	Feb.	Mar.
Change in number of memberships	18	10	40	-25	-15

- 23. Bank Account Activity** During a 14-day period, there is the following activity on your bank account. You deposit \$100, withdraw \$75, deposit \$85, and withdraw \$150. What is the rate of change (in dollars per day) in your bank account? Round your answer to the nearest cent.

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LESSON
2.7

Practice B

For use with pages 109–118

Evaluate the expression.

1. $\pm\sqrt{81}$

2. $\pm\sqrt{25}$

3. $-\sqrt{400}$

4. $\sqrt{625}$

5. $\sqrt{4900}$

6. $\pm\sqrt{169}$

Approximate the square root to the nearest integer.

7. $-\sqrt{29}$

8. $\sqrt{108}$

9. $-\sqrt{53}$

10. $\sqrt{138}$

11. $-\sqrt{55}$

12. $\sqrt{640}$

Tell whether each number in the list is a real number, a rational number, an irrational number, an integer, or a whole number. Then order the numbers from least to greatest.

13. $-\sqrt{16}, 3.2, -\frac{3}{2}, \sqrt{9}$

14. $\sqrt{5}, -6, 2.5, -\frac{24}{5}$

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LESSON
2.7**Practice B** *continued*
For use with pages 109–118**Evaluate the expression for the given value of x .**

15. $14 + \sqrt{x}$ when $x = 16$

16. $\sqrt{x} - 5.5$ when $x = 4$

17. $-9 \cdot \sqrt{x}$ when $x = 25$

18. $2\sqrt{x} - 1$ when $x = 100$

19. **Park** A local park is in the shape of a square and covers an area of 3600 square feet. Find the side length of the park.20. **Wall Poster** You are considering buying a square wall poster that has an area of 6.25 square feet. Find the side length of the wall poster.21. **Road Sign** The U.S. Department of Transportation determines the sizes of the traffic control signs that you see along the roadways. The square Pennsylvania state route sign at the right has an area of 1296 square inches. Find the side length of the sign.22. **Flower Bed** You are building the square flower bed shown using railroad ties. You want to place another railroad tie on the diagonal to form two triangular beds. Find the length of the diagonal by using the expression $\sqrt{2}s^2$ where s is the side length of the flower bed. Round your answer to the nearest tenth.