

Course 2 Unit 2 Practice

LESSON 5-1

1. Find the value of the variable in each equation. State the property or properties illustrated by the statement. Then explain how the properties were used.

a. $12 + (9 + 8) = (12 + x) + 9$

b. $\frac{1}{3} + \left(6 + \frac{2}{3}\right) = \left(\frac{1}{3} + \frac{2}{3}\right) + 6$

c. $15 \cdot n = 15$

d. $-\frac{5}{8} + y = 0$

2. Write an algebraic statement that illustrates each property.

a. Associative Property of Multiplication

b. Additive Inverse Property

c. Commutative Property of Addition

d. Multiplicative Identity Property

3. Which property is illustrated by the following statement?

$$-\frac{a}{b} \cdot -\frac{b}{a} = 1$$

- A. Associative Property of Multiplication
 B. Commutative Property of Multiplication
 C. Multiplicative Identity Property
 D. Multiplicative Inverse Property

4. **Reason abstractly.** Name a property that cannot be used when you get dressed in the morning. Explain your choice.

5. What is the difference between the Commutative Property and the Associative Property? Explain. Show examples.

LESSON 5-2

6. Use the Distributive Property to expand each expression.

a. $3(10n + 9)$

b. $8(x + 5)$

c. $12(6k - 3)$

d. $a(b + 4)$

7. Use the Distributive Property to factor each expression.

a. $48 - 16a$

b. $60n + 48$

c. $45y + 15$

d. $63c - 49d$

8. Which expression is equivalent to $(3 + z)6 + 18z$?

A. $6z + 36$

B. $24z + 3$

C. $24z + 18$

D. $42z$

9. **Attend to precision.** Use the properties of operations to rewrite each expression so that they can be easily evaluated using mental math. Evaluate each expression. Show your work. Name the properties you used.

a. $1.7 + 2.5 + 4.3$

b. $9.25 + 3.17 + 0.75 + 2.03$

c. $\frac{7}{12} + \frac{5}{9} + 1\frac{5}{12}$

d. $\frac{2}{5} - \frac{3}{8} + \frac{3}{5}$

10. **Make sense of problems.** The length of a rectangle is three more than twice the width. Write an expression for the perimeter. Use the Distributive Property to simplify.

LESSON 6-1

11. Donna has a T-shirt printing business. She charges \$15 per shirt to groom plus a \$23 set-up fee. Donna charged \$473 for one order. Write an equation to determine the number of T-Shirts in that order.

12. Sam can rent a canoe for \$3 an hour. If he rents the canoe, he would also have to pay \$15 for a non-refundable deposit. He has \$30 to spend on canoeing. Write an equation to find out how many hours Sam can canoe.

13. Tristan bought school supplies. He bought a graphing calculator for \$199.99 and binders that cost \$8.99 each. The total cost for the school supplies was \$244.94. Write an equation to find how many binders Tristan bought.

14. Kaylee spent \$153 on some school clothes. She bought a pair of jeans for \$45 and T-shirts at \$18 each. Write an equation to find how many T-shirts Kaylee bought.

15. Adriana is saving to buy a camera for \$150. She has \$25 in her savings account. Every week she earns \$9 an hour babysitting for her neighbor Mrs. Beshara. Write an equation to determine the number of hours Adriana will have to babysit in order to earn enough money for the camera.

LESSON 6-2

16. Which of the following values for x makes the equation $5x - 9 = -29$ true?

- A. 4
- B. 2
- C. -1
- D. -4

17. Solve each equation algebraically.

a. $7x + 3 = 24$

b. $16y - 12 = 52$

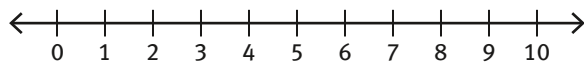
c. $2n - \frac{3}{4} = 10\frac{1}{4}$

d. $8 - 5a = 13$

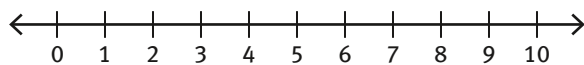
e. $12k + 7 = 15$

18. Solve and graph the solution of each equation on the number line.

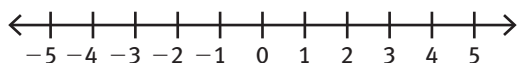
a. $70 = 13b + 5$



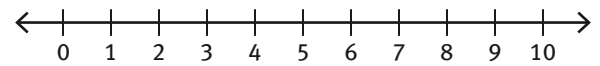
b. $9m + 1\frac{3}{5} = 64\frac{3}{5}$



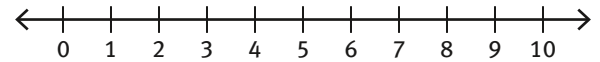
c. $-30 = 6c - 12$



d. $-15h + 100 = 40$



e. $\frac{2}{3}x - 1 = -\frac{3}{5}$



19. **Make sense of problems.** The school plans to charter a bus for a class trip. The bus will cost \$360. There is \$94 in the class treasury. The 28 students who are going on the trip will pay for the difference in the cost. Write and solve an equation to find how much each student will pay.

20. Jessie is participating in a walkathon to raise money for a local charity. Jessie plans to raise \$150. He plans to ask each person who supports his walk to pledge \$5. He plans to contribute \$15 himself. Write and solve an equation to find the number of supporters he needs in order to reach his goal.

LESSON 7-1

21. Daphne is putting pencils into boxes at the museum store. Each box holds 5 pencils. Daphne has already filled 7 boxes. Write an inequality that shows how many more pencils she will need in order to fill at least 15 boxes.

22. Tenzing has a clothes budget of \$100 for school. He plans to buy a pair of jeans for \$49 and some shirts for \$19.59. Write an inequality that shows how many shirts he can buy and stay under his budget.

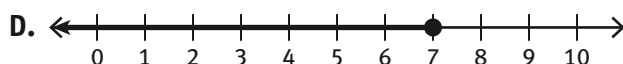
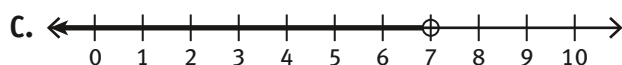
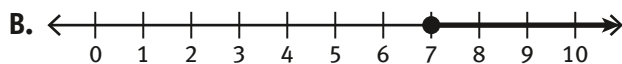
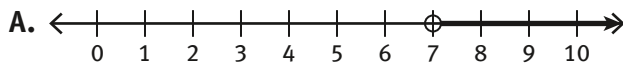
23. Seven less than twice a number is greater than fifty-nine. Write an inequality that can be used to find one number that fits the situation.

24. The length of a rectangle is 3.5 centimeters more than its width. The perimeter of the rectangle is less than 30 centimeters. Write an inequality that can be used to find one possible measure for the width.

25. Jayden's grandmother gave him a \$75 gift card for his birthday. He has spent a total of \$38 so far. He wants to spend the rest of the money on baseball caps. Write an inequality that can be used to find the number of baseball caps Jayden can buy with the money he has left on the card if each baseball cap costs \$9.49.

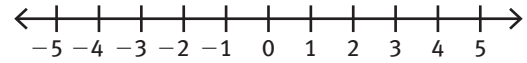
LESSON 7-2

26. Which graph shows the solution to the inequality $6x - 5 \geq 37$?

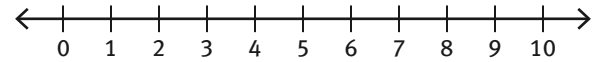


27. Solve each of the following inequalities algebraically. Graph the solutions on a number line.

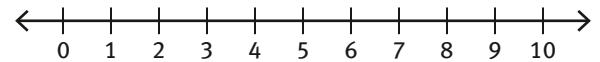
a. $7x - 3 \leq -10$



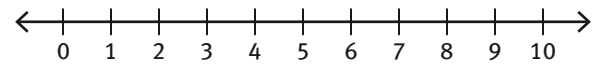
b. $16a + 7 > 55$



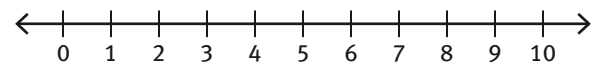
c. $48 \leq 11h - 7$



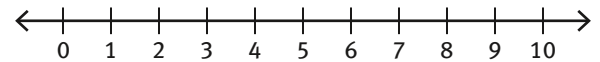
d. $-14z + 23 < 16$



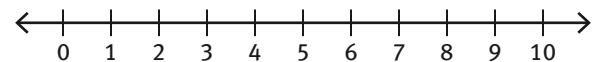
e. $8(k + 3) \leq -16$



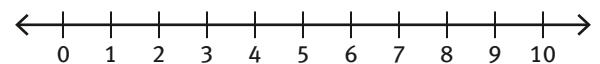
f. $11x + 8 - 5x \leq 12$



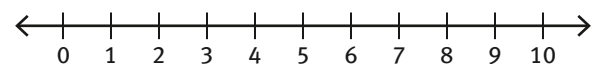
g. $\frac{2}{3}b - 1 > \frac{2}{5}$



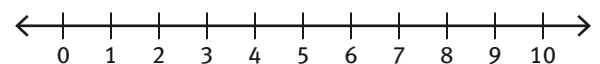
h. $-4m + 29 \leq -7$



i. $-5(y - 2) + 9 \leq -11$



j. $-2 \leq 15d + 43$



28. Attend to precision. What are three solutions of the inequality $-9x + 4 < 76$? Explain.

29. Caitlan had \$50 to go canoeing. She had to pay an \$18 deposit in addition to the hourly rate of \$10.50 per hour. Write and solve an inequality to find the greatest number of hours for which she could rent the canoe.

30. Make sense of problems. Dakota purchased tickets to a concert for her and her friends. There was a \$7 handling charge and the tickets cost \$35.50 apiece. Altogether she spent less than \$150. Write and solve an inequality to find the greatest number of tickets she could have purchased.