

2.4 Exercises

Vocabulary and Concept Check

- VOCABULARY** What property would you use to solve $m + 6 = -4$?
- VOCABULARY** Name two inverse operations.
- WRITING** Are the equations $m + 3 = -5$ and $m = -2$ equivalent? Explain.
- WHICH ONE DOESN'T BELONG?** Which equation does *not* belong with the other three? Explain your reasoning.

$$x + 3 = -1$$

$$x + 1 = -5$$

$$x - 2 = -6$$

$$x - 9 = -13$$

Practice and Problem Solving

Solve the equation. Check your solution.

1 5. $a - 6 = 13$

6. $-3 = z - 8$

7. $-14 = k + 6$

8. $x + 4 = -14$

9. $c - 7.6 = -4$

10. $-10.1 = w + 5.3$

11. $\frac{1}{2} = q + \frac{2}{3}$

12. $p - 3\frac{1}{6} = -2\frac{1}{2}$

13. $g - 9 = -19$

14. $-9.3 = d - 3.4$

15. $4.58 + y = 2.5$

16. $x - 5.2 = -18.73$

17. $q + \frac{5}{9} = \frac{1}{6}$

18. $-2\frac{1}{4} = r - \frac{4}{5}$

19. $w + 3\frac{3}{8} = 1\frac{5}{6}$

20. $4\frac{2}{5} + k = -3\frac{2}{11}$

21. **ERROR ANALYSIS** Describe and correct the error in finding the solution.

$$\begin{array}{r} x + 8 = 10 \\ + 8 \quad + 8 \\ \hline x = 18 \end{array}$$

Write the verbal sentence as an equation. Then solve.

2 22. 4 less than a number n is -15 .

23. 10 more than a number c is 3.

24. The sum of a number y and -3 is -8 .

25. The difference between a number p and 6 is -14 .

In Exercises 26–28, write an equation. Then solve.

26. **DRY ICE** The temperature of dry ice is -109.3°F . This is 184.9°F less than the outside temperature. What is the outside temperature?

27. **PROFIT** A company makes a profit of $\$1.38$ million. This is $\$2.54$ million more than last year. What was the profit last year?

28. **PIER** The difference between the lengths of a paddle boat and a pier is $-7\frac{3}{4}$ feet. The pier is $18\frac{1}{2}$ feet long. How long is the paddle boat?

Vocabulary and Concept Check

1. **WRITING** Explain why multiplication can be used to solve equations involving division.

2. **OPEN-ENDED** Turning a light on and then turning the light off are considered to be inverse operations. Describe two other real-life situations that can be thought of as inverse operations.

Describe the inverse operation that will undo the given operation.

3. Multiplying by 5 4. Subtracting 12 5. Dividing by -8 6. Adding -6



Practice and Problem Solving

Solve the equation. Check your solution.

① 7. $3h = 15$

8. $-5t = -45$

9. $\frac{n}{2} = -7$

10. $\frac{k}{-3} = 9$

11. $5m = -10$

12. $8t = -32$

13. $-0.2x = 1.6$

14. $-10 = -\frac{b}{4}$

15. $-6p = 48$

16. $-72 = 8d$

17. $\frac{n}{1.6} = 5$

18. $-14.4 = -0.6p$

② 19. $\frac{3}{4}g = -12$

20. $8 = -\frac{2}{5}c$

21. $-\frac{4}{9}f = -3$

22. $26 = -\frac{8}{5}y$

23. **ERROR ANALYSIS** Describe and correct the error in finding the solution.



$$-4.2x = 21$$

$$\frac{-4.2x}{4.2} = \frac{21}{4.2}$$

$$x = 5$$

Write the verbal sentence as an equation. Then solve.

24. A number divided by -9 is -16 .

25. A number multiplied by $\frac{2}{5}$ is $\frac{3}{20}$.

26. The product of 15 and a number is -75 .

27. The quotient of a number and -1.5 is 21 .

In Exercises 28 and 29, write an equation. Then solve.

28. **NEWSPAPERS** You make $\$0.75$ for every newspaper you sell. How many newspapers do you have to sell to buy the soccer cleats?

29. **ROCK CLIMBING** A rock climber averages $12\frac{3}{5}$ feet per minute. How many feet does the rock climber climb in 30 minutes?

