1.3 Evaluation of a Linear Expression in Two Variables

• Example 1

Suppose that $a = 5$ and $b = 7$.

(a) To evaluate $a + b$, we replace a with 5 and b with 7.

$a + b = 5 + 7 = 12$

(b) To evaluate $3a + b$, we again replace a with 5 and b with 7.

$3a + b = 3 \times 5 + 7 = 15 + 7 = 22$

CHECK YOURSELF 1

If $x = 6$ and $y = 7$, evaluate the two expressions below.

a. $y - x$ **b.** $5x + y$

• Example 2

Evaluate $5a + 4b$ if $a = -2$ and $b = 3$.

$$5a + 4b = 5 \times (-2) + 4 \times 3$$
$$= -10 + 12$$
$$= 2$$

CHECK YOURSELF 2

Evaluate $3x + 5y$ if $x = -2$ and $y = -5$.

CHECK YOURSELF ANSWERS

1. (a) 1; **(b)** 37. **2.** -31.

1.3 Exercises

Name

Section Date

ANSWERS

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Evaluate each of the expressions if $a = -2$, $b = 5$, $c = -4$, and $d = 6$.

1. $3c - 2b$

2. $4c - 2b$

3. $8b + 2c$

4. $7a - 2c$

5. $2(a + b)$

6. $5(b - c)$

7. $4(2a - d)$

8. $6(3c - d)$

9. Perimeter. The perimeter of a rectangle of length L and width W is given by the formula $P = 2L + 2W$. Find the perimeter when $L = 10$ inches and $W = 5$ in.

Evaluate if $a = -2$, $b = 6$, and $c = -4$.

10. $4a - c$

11. $5c - a$

12. $6(2b - 3c)$