Name_____ Date _____

1.2 Practice B

In Exercises 1–6, evaluate the function.

$$f(x) = \begin{cases} -x + 2, & \text{if } x < -3 \\ 7, & \text{if } -3 \le x < 0 \\ 3x - 1, & \text{if } x \ge 0 \end{cases}$$

1. $f(-5)$ **2.** $f(4)$ **3.** $f(1)$

4. $f(0)$ **5.** $f\left(-\frac{1}{2}\right)$ **6.** $f(-3)$

7. The total cost (in dollars) of ordering graduation announcements is represented by the piecewise function

$$c(x) = \begin{cases} 1.5x + 15, & \text{if } 0 \le x < 25 \\ 1.25x + 15, & \text{if } 25 \le x < 40 \\ x + 15, & \text{if } x \ge 40 \end{cases}.$$

a. Determine the cost of ordering 25 announcements. Then determine the cost of ordering 24 announcements.

b. For what number of announcements less than 25 is it financially better to purchase 25 announcements?

c. For what number of announcements less than 40 is it financially better to purchase 40 announcements?

In Exercises 8–11, graph the function. Describe the domain and range.

8. $f(x) = \begin{cases} -x + 5, & \text{if } x < 5 \\ x - 5, & \text{if } x \ge 5 \end{cases}$

9. $f(x) = \begin{cases} 2x - 3, & \text{if } x \le -1 \\ 2x + 2, & \text{if } x > -1 \end{cases}$

10. $f(x) = \begin{cases} -x + 1, & \text{if } x < -3 \\ 4, & \text{if } -3 \le x < 0 \\ 3x + 4, & \text{if } x \ge 0 \end{cases}$

11. $f(x) = \begin{cases} x + 3, & \text{if } x < -2 \\ x - 2, & \text{if } -2 \le x < 2 \\ -2, & \text{if } x \ge 2 \end{cases}$

In Exercises 12–15, write the absolute value function as a piecewise function.

12. $y = |x - 3|$

13. $y = -2|x + 4|$

14. $y = -|x + 1| + 3$

15. $y = 5|x - 2| + 1$