

**2-7****Practice**

Form G

## Absolute Value Functions and Graphs

**Graph each equation.**

1.  $y = |x| - 2$

2.  $y = |x| + 3$

3.  $y = |x| - 5$

4.  $y = |x| - 4$

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

6.  $y = |x + 1| - 4$

**Graph each equation. Then describe the transformation from the parent function  $f(x) = |x|$ .**

7.  $y = 2|x|$

8.  $y = \frac{1}{4}|x|$

9.  $y = -3|x|$

**Without graphing, identify the vertex, axis of symmetry, and transformations from the parent function  $f(x) = |x|$ .**

10.  $y = |x - 4|$

11.  $y = -3|x| - 2$

12.  $y = -|3x| + 4$

13.  $y = 5 - |x - 1|$

**2-7****Practice** (continued)

Form G

## Absolute Value Functions and Graphs

14. Graph  $y = -|x-4|+5$ . List the vertex and the  $x$ - and  $y$ -intercepts, if any.

**Graph each absolute value equation.**

15.  $y = |3-x|$

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

17.  $y = -|-x-2|$

18.  $y = -|x|+2$

19.  $y = |3x-1|-2$

20.  $y = \left| \frac{3}{4}x+1 \right|$

21.  $y = \frac{1}{3}|2x-9|$

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

23.  $y = -\frac{1}{2}|2x-4|$

24. a. Graph the equations  $y = 2|x+4|-1$  and  $y = \frac{1}{2}|x-4|+1$  on the same set of axes.

b. **Writing** Describe the similarities and differences in the graphs.

# 2-8 Practice

## Two-Variable Inequalities

Form G

Graph each inequality.

1.  $y < x$

2.  $y \geq x$

3.  $y > 2$

4.  $y < 2$

5.  $x \leq 2$

6.  $-2y \leq -x - 2$

7.  $-2x - y - 1$

8.  $y \geq 3x - 4$

9. You have a \$25 calling card. Calls made using the card within the United States cost \$.10 per minute while calls made from the US to France cost \$.25 per minute.

a. Write an inequality that relates the number of minutes  $x$  you can use for calls within the U.S. and the number of minutes  $y$  you can use for calls from the U.S. to France.

b. Graph the inequality.

Graph each absolute value inequality.

10.  $y \geq |x|$

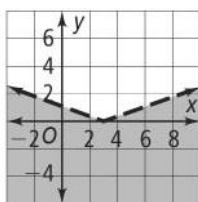
11.  $y > |x + 2|$

12.  $y \leq |x - 2|$

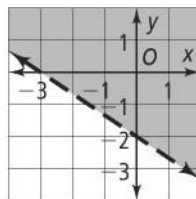
13.  $y > |x| + 2$

Write an inequality for each graph. The equation for the boundary line is given.

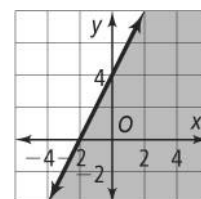
14.  $y - 2x = 4$



15.  $-2x - 3y = 6$



16.  $3y = |x - 3|$



# 2-8

## Practice (continued) Two-Variable Inequalities

Form G

Graph each inequality on a coordinate plane.

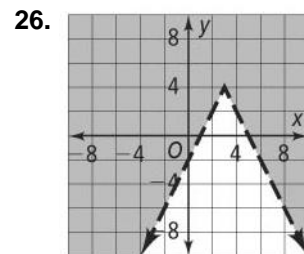
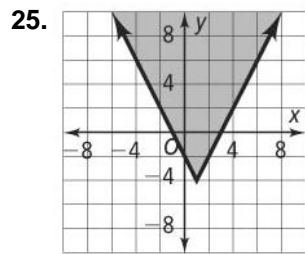
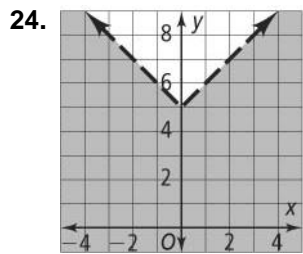
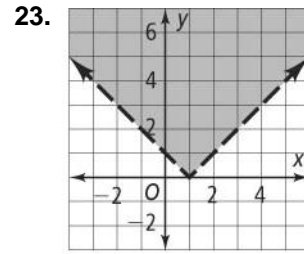
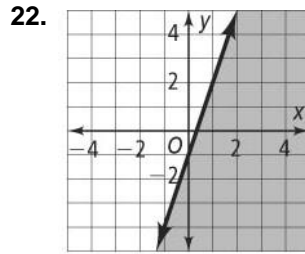
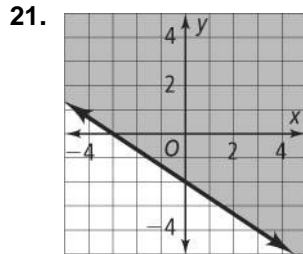
17.  $4x + 2y \leq 8$

18.  $3x \leq 5y$

19.  $y > -\frac{1}{6}x - 1$

20.  $y \geq \left| \frac{1}{6}x \right| - 3$

Write an inequality for each graph.



27. **Open-Ended** Write an inequality that includes  $(0, 9)$ ,  $(-10, 10)$ ,  $(10, -20)$ , and  $(-20, 15)$  as solutions.

28. A salesperson sells two models of vacuum cleaners. One brand sells for \$150 each and the other sells for \$200 each. The salesperson has a weekly sales goal of at least \$1800.

- Write an inequality relating the revenue from the vacuum cleaners to the sales goal.
- Graph the inequality.
- If the salesperson sold exactly six \$200 models last week, how many \$150 models did she have to sell to make her sales goal?