



Graph each absolute-value function on a separate sheet of paper. Identify the vertex, axis of symmetry,  $x$ - and  $y$ -intercepts, domain, and range. Tell whether the graph opens up or down.

25.  $y = |x + 6|$

vertex:  $(-6, 0)$   
 axis of symmetry:  $x = -6$   
 $x$ -intercept:  $-6$ ;  $y$ -intercept:  $6$   
 domain: all real numbers  
 range:  $y \geq 0$ ; opens up

26.  $y = |x + 8|$

27.  $y = |x| + 9$

28.  $y = |x| + 12$

29.  $y = -|x| + 7$

30.  $y = -|x| + 5$

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

32.  $y = -|x + 4|$

33.  $y = |x - 1.8| + 2.9$

34.  $y = |x - 2.5| + 1.8$

35.  $y = -\left|x + \frac{2}{3}\right| - \frac{1}{6}$

36.  $y = -\left|x + \frac{1}{4}\right| - \frac{1}{2}$

Graph and compare each function.

37. How is the graph of  $y = |x + 12|$  related to the graph of  $y = |x|$ ?

38. How is the graph of  $y = |x| - 8$  related to the graph of  $y = |x|$ ?

**TEST PREPARATION**

39. Which equation has a vertex of  $(-8, 11)$ ?

- A.  $y = -|x + 8| - 11$     C.  $y = |x - 8| + 11$   
 B.  $y = |x + 8| - 11$     D.  $y = -|x + 8| + 11$

40. Which vertex belongs to the equation

$y = -|2x + 3| + 4$ ?

- F.  $(-\frac{2}{3}, 4)$     H.  $(-\frac{3}{2}, 4)$   
 G.  $(-4, \frac{3}{2})$     J.  $(-4, \frac{2}{3})$

$x$  |  $y$

SCALE

