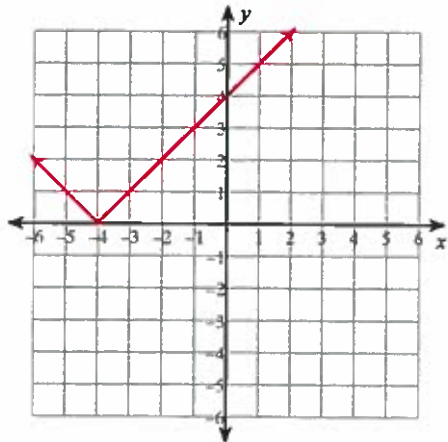


Homework 3.2 Absolute Value Transformation

Graph each equation **WITHOUT** using technology, except to check your work.

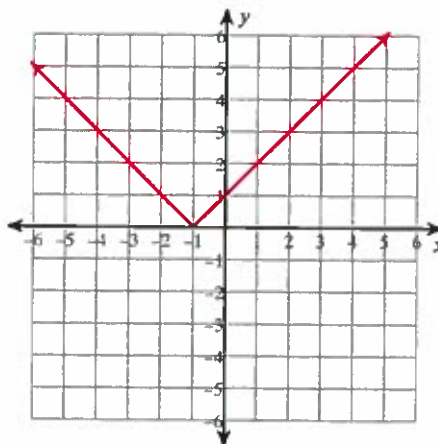
In the space below each graph, write an explanation of how the graph was transformed (or moved).

1) $y = |x + 4|$



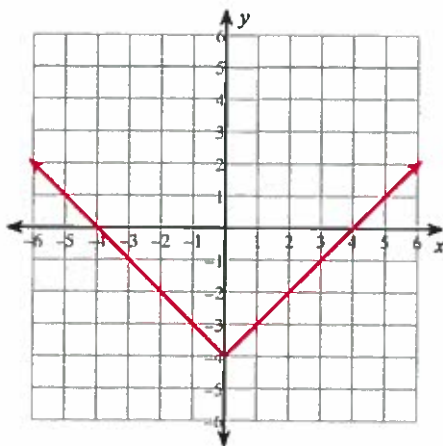
Shift 4 to the left

2) $y = |x + 1|$



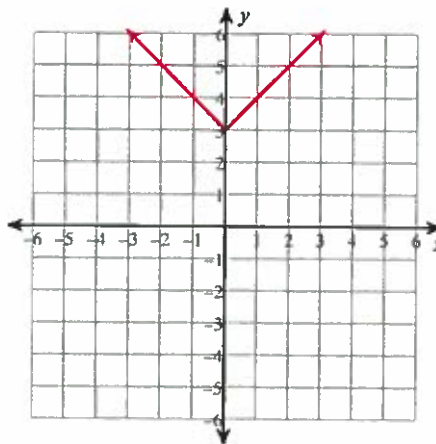
Shift 1 to the left

3) $y = |x| - 4$



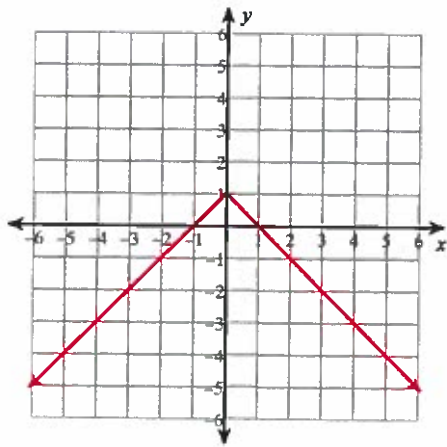
Shift 4 down

4) $y = |x| + 3$



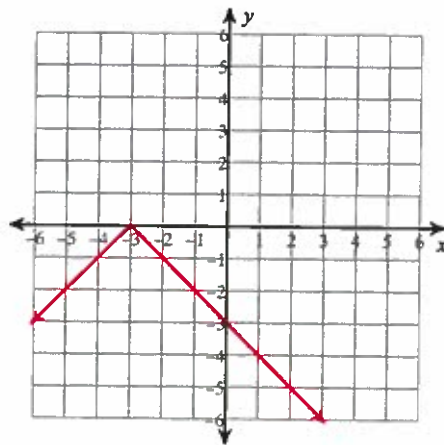
shift 3 up

5) $y = -|x| + 1$



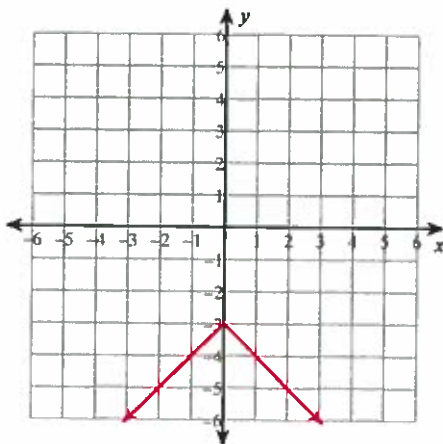
- reflect across the vertex (0,1)
- shift 1 up

6) $y = -|x + 3|$



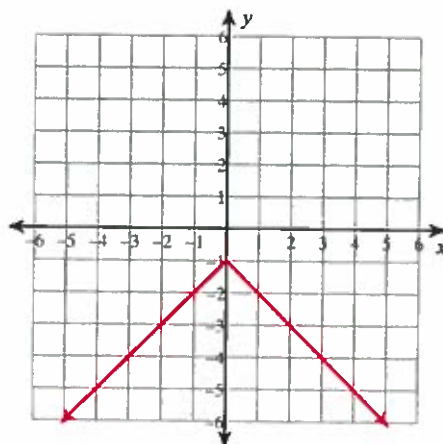
- shift 3 left
- reflect across the vertex (-3,0)

7) $y = -|x| - 3$



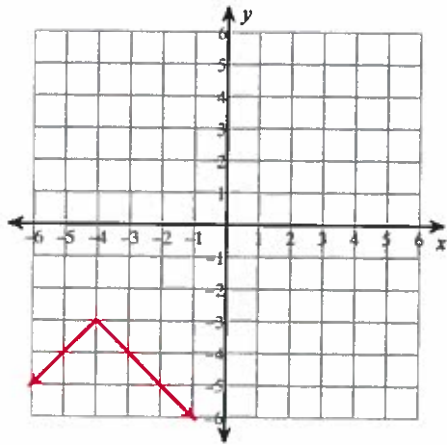
- shift 3 down
- reflect across the vertex (0,-3)

8) $y = -|x| - 1$



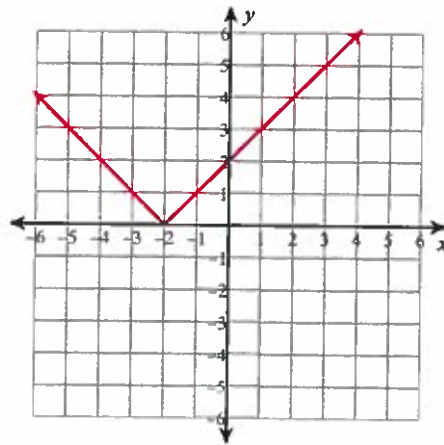
- shift 1 down
- reflect across the vertex (0,-1)

$$9) y = -|x + 4| - 3$$



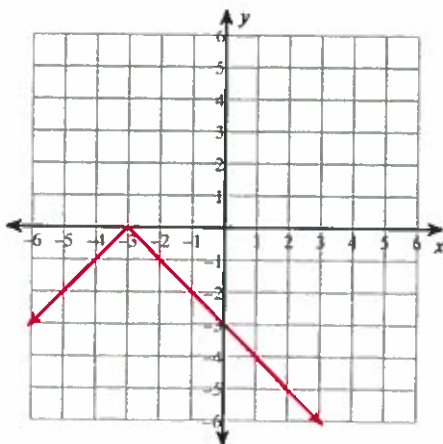
- shift 4 left
- shift 3 down
- reflect across the vertex $(-4, -3)$

$$10) y = |x + 2|$$



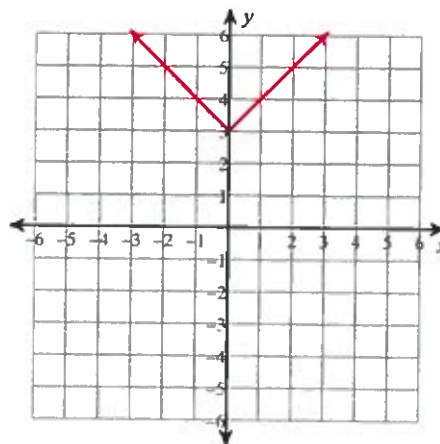
- shift 2 left

$$11) y = -|x + 3|$$



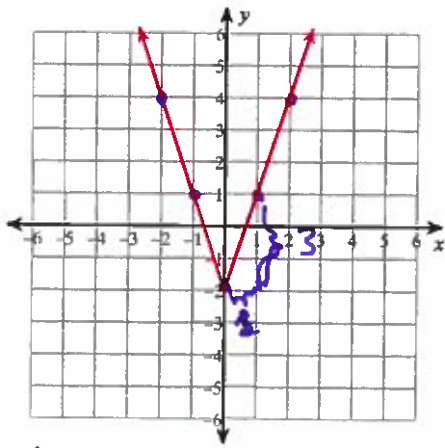
- shift 3 left
- reflect across the vertex $(-3, 0)$

$$12) y = |x| + 3$$



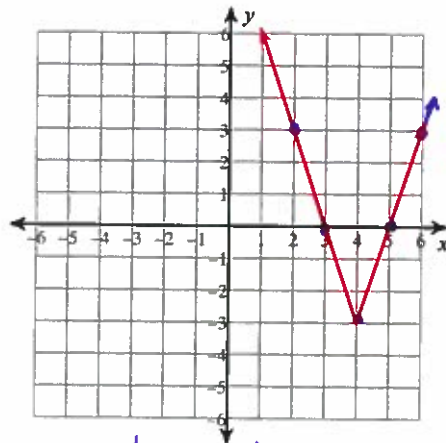
- shift 3 up

13) $y = 3|x| - 2$



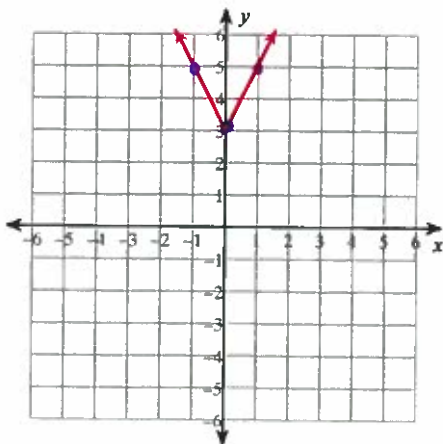
- shift down 2
- Vertical stretch
(aka increase slope)
to $\frac{3}{1}$

14) $y = 3|x - 4| - 3$



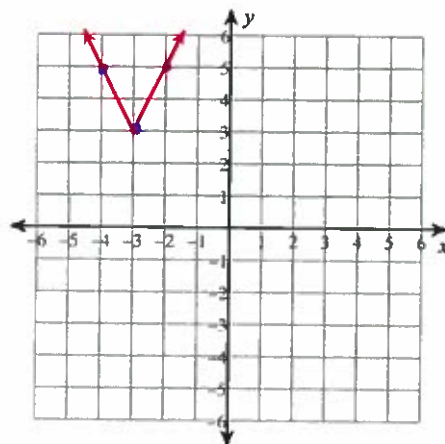
- shift 4 right
- shift 3 down
- Vertical stretch by 3
(aka increase slope)
to $\frac{3}{1}$

15) $y = 2|x| + 3$



- shift 3 up
- Vertical stretch
by 2
(aka increase slope)
to $\frac{2}{1}$

16) $y = 2|x + 3| + 3$



- shift 3 up
- shift 3 left
(aka increase slope)
to $\frac{2}{1}$