Name_____ Date_____

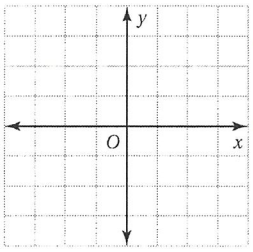
**Extension 5.4**

# Practice

**For use after Extension 5.4**

**Graph the function. Describe the domain and range.**

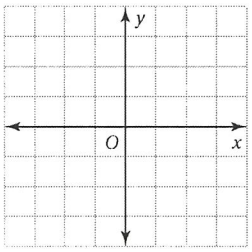
**1.** $y = \begin{cases} x - 1, & \text{if } x \leq 0 \\ 2x, & \text{if } x > 0 \end{cases}$




D:

R:

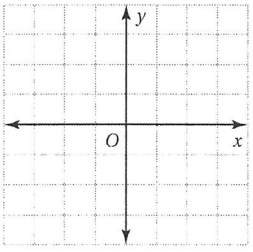
**2.** $y = \begin{cases} -3, & \text{if } x \leq -1 \\ -\frac{1}{3}x + 1, & \text{if } x > -1 \end{cases}$




D:

R:

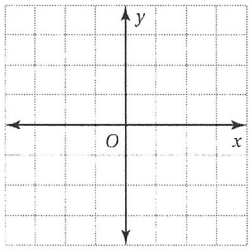
**3.** $y = \begin{cases} 3, & \text{if } x \leq -1 \\ -2x, & \text{if } -1 < x < 1 \\ 3x - 6, & \text{if } x \geq 1 \end{cases}$




D:

R:

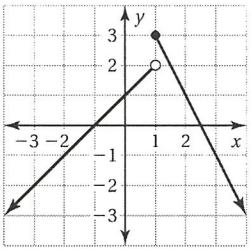
**4.** $y = \begin{cases} -2x - 4, & \text{if } x \leq -2 \\ 4x + 1, & \text{if } -2 < x \leq 1 \\ x, & \text{if } x > 1 \end{cases}$




D:

R:

**5.** Write a piecewise function for the graph.



Name _____ Date _____

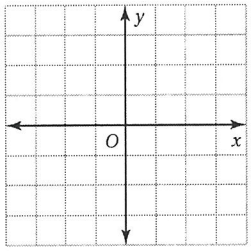
**Extension 5.4** **Practice (continued)**

*Use table to graph!

**Graph the function. Compare the graph to the graph of $y = |x|$. Describe the domain and range.**

**6.** $y = |x| - 2$

Compare to $y = |x|$:

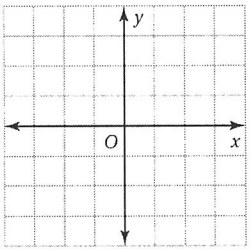



D:

R:

**7.** $y = |x + 3|$

Compare to $y = |x|$:

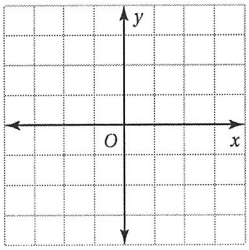



D:

R:

**8.** $y = -\frac{1}{3}|x|$

Compare to $y = |x|$:

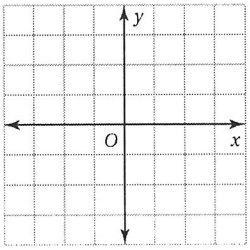



D:

R:

**9.** $y = |x - 1| - 4$

Compare to $y = |x|$:




D:

R:

**Write an equation for the given translation of $y = |x|$.**

**10.** 3 units right

**11.** 2 units down and 8 units left