

Name \_\_\_\_\_

Period \_\_\_\_\_

Date \_\_\_\_\_

## Trigonometry/PreCalculus Level 1

## Lesson 1.5 Day 2

*Objectives: To be able to graph and write piecewise defined functions**To be able to identify the domain and range of piecewise defined functions*

Piecewise-Defined Functions

**Example 1:** Evaluating piecewise-defined functions.Evaluate the function for the given value of  $x$ .

$$f(x) = \begin{cases} 3, & \text{if } x \leq 0 \\ 2, & \text{if } x > 0 \end{cases}$$

$$g(x) = \begin{cases} x + 5, & \text{if } x \leq 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$$

$$h(x) = \begin{cases} \frac{1}{2}x - 4, & \text{if } x \leq -2 \\ 3 - 2x, & \text{if } x > -2 \end{cases}$$

1.  $f(2)$

2.  $f(-4)$

3.  $f(0)$

4.  $f\left(\frac{1}{2}\right)$

5.  $g(7)$

6.  $g(0)$

7.  $g(-1)$

8.  $g(3)$

9.  $h(-4)$

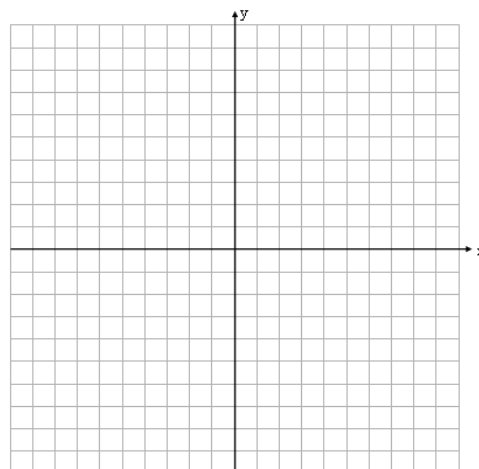
10.  $h(-2)$

11.  $h(-1)$

12.  $h(6)$

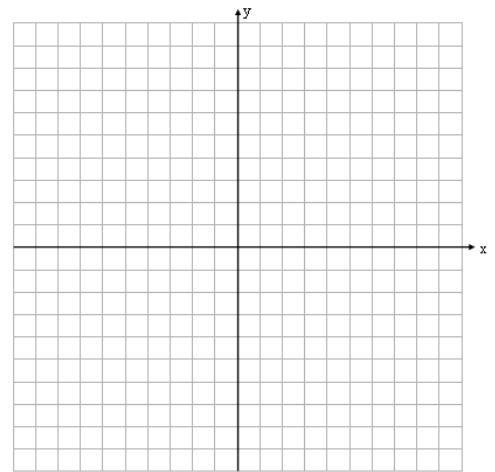
**Example 2:** Graphing piecewise-defined functions

Graph  $f(x) = \begin{cases} 2x + 1 & \text{if } x > -1 \\ -3 & \text{if } x \leq -1 \end{cases}$ . Identify the domain and range.



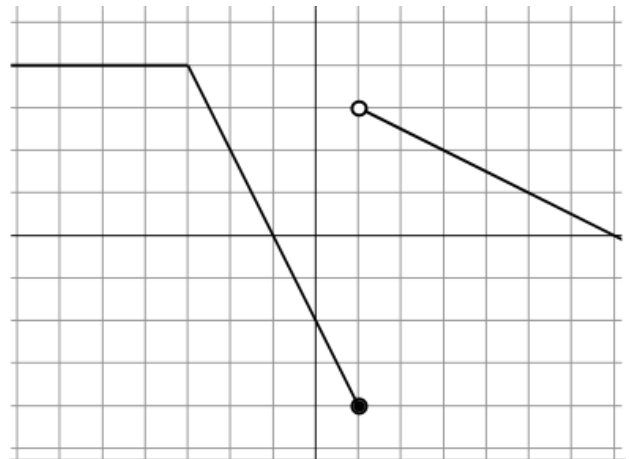
You Try!

Graph  $f(x) = \begin{cases} x-1 & \text{if } x \leq 3 \\ -1 & \text{if } x > 3 \end{cases}$ . Identify the domain and range.



**Example 2:** Writing piecewise-defined functions

Write the piecewise-defined function.



You try!

Write a piecewise-defined function for each graph.

