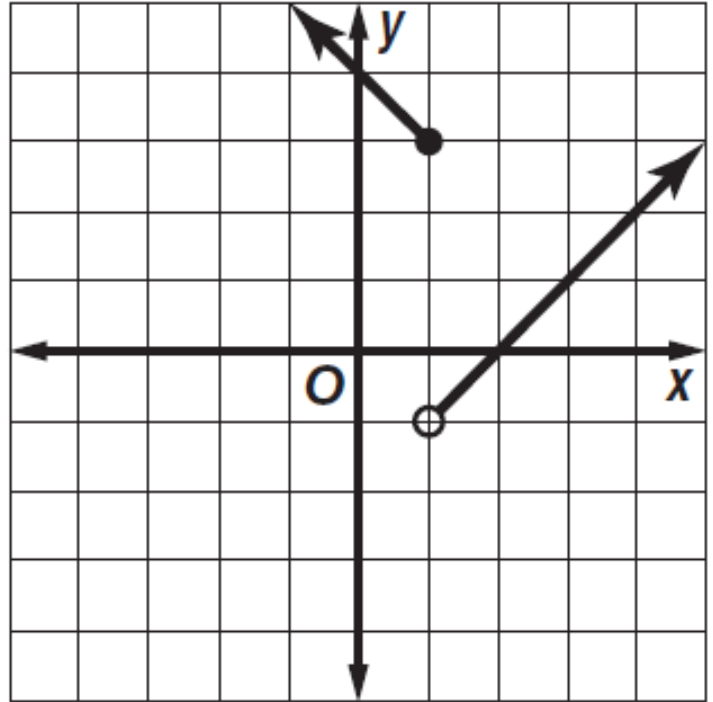


**AIM: HOW DO WE EVALUATE PIECEWISE - LINEAR FUNCTIONS?**

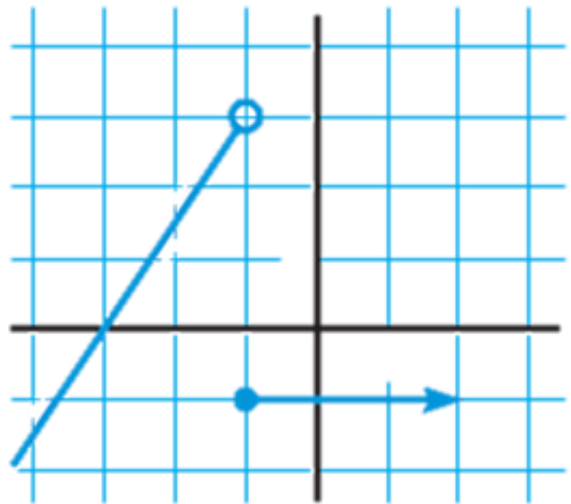
Do now: #1

1. Consider the following function  $f$ :

- Find  $f(3)$
- Find  $f(1)$
- Find  $x$  if  $f(x) = 2$
- Find  $x$  if  $f(x) = -1$
- Identify the domain in set builder notation.
- Identify the range in set builder notation.

2. Consider the following function  $g$ :

- Identify the domain in set builder notation.
- Identify the range in set builder notation.
- Find  $g(-1)$
- Find  $g(-3)$
- Find  $x$  if  $g(x) = 3$
- Find  $x$  if  $g(x) = -1$



3. Evaluate the following piecewise function

$$f(x) = \begin{cases} -x & \text{if } x < 0 \\ x+1 & \text{if } x \geq 0 \end{cases}$$

a) Find  $f(-3)$  \_\_\_\_\_

b) Find  $f(2)$  \_\_\_\_\_

c) Find  $f(0)$  \_\_\_\_\_

4. Evaluate the following piecewise function

$$f(x) = \begin{cases} x+1 & \text{if } x > 1 \\ 2x & \text{if } x \leq 1 \end{cases}$$

a) Find  $f(-3)$  \_\_\_\_\_

b) Find  $f(2)$  \_\_\_\_\_

c) Find  $f(1)$  \_\_\_\_\_

5. Evaluate the following piecewise function

$$f(x) = \begin{cases} 2x + 3 & \text{if } x < -1 \\ -x + 3 & \text{if } x \geq -1 \end{cases}$$

a) Find  $f(-3)$  \_\_\_\_\_

b) Find  $f(-1)$  \_\_\_\_\_

c) Find  $f(0)$  \_\_\_\_\_

6. Evaluate the following piecewise function

$$h(x) = \begin{cases} 4x - 3 & x < 0 \\ 2 & 0 \leq x \leq 2 \\ -2x + 8 & x > 2 \end{cases}$$

a) Find  $f(-3)$  \_\_\_\_\_

b) Find  $f(2)$  \_\_\_\_\_

c) Find  $f(9)$  \_\_\_\_\_

7. Evaluate the following piecewise function

$$f(x) = \begin{cases} x^2 & \text{if } x < 2 \\ 6 & \text{if } x = 2 \\ 10 - x & \text{if } x > 2 \text{ and } x \leq 6 \end{cases}$$

a) Find  $f(2)$  \_\_\_\_\_

b) Find  $f(-5)$  \_\_\_\_\_

c) Find  $f(9)$  \_\_\_\_\_

**Unit 6****Lesson 9**

HW# \_\_\_\_\_

1. Consider the following function  $f$ :

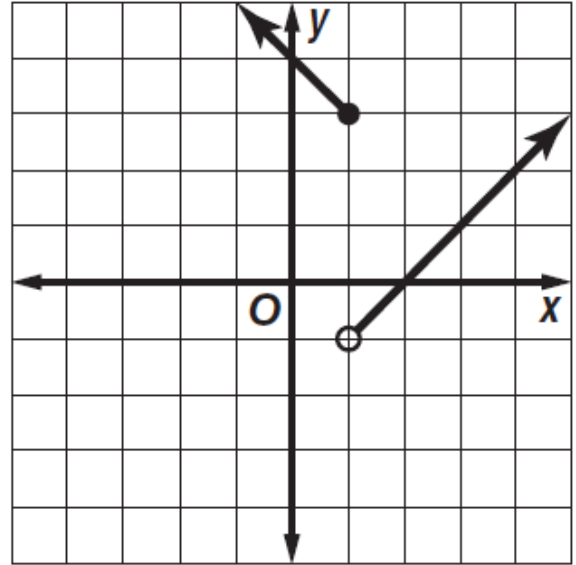
a. Find  $f(4)$

b. Find  $x$  if  $f(x) = 1$

c. Find  $x$  if  $f(x) = 4$

d. Identify the domain in interval notation.

e. Identify the range in interval notation.



2. Evaluate the following piecewise function

$$f(x) \begin{cases} -2x - 1 & x \leq 2 \\ -x + 4 & x > 2 \end{cases}$$

(a) Find  $f(3) =$

(b) Find  $f(2) =$

(c) Find  $f(1) =$

3. Evaluate the following piecewise function

$$f(x) \begin{cases} -4 & x \leq -2 \\ x - 2 & -2 < x < 2 \\ -2x + 4 & x \geq 2 \end{cases}$$

(a) Find  $f(0) =$

(b) Find  $f(-6) =$

(c) Find  $f(2) =$

