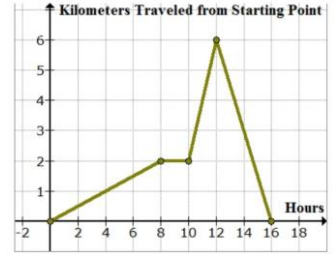


**Do Now:** Below is a graph that describes Ms. Ackerman’s hiking trip.

a) Did which period of time did Ms. Ackerman traveled the quickest? Justify your answer.

b) Explain what Ms. Ackerman could have been doing during 8<sup>th</sup> through the 10<sup>th</sup> hour.



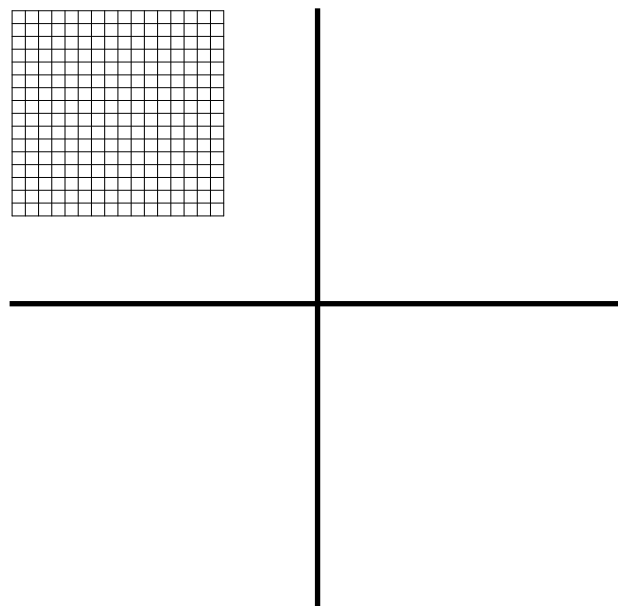
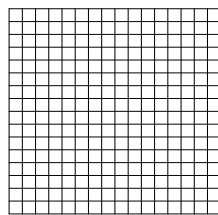
**AIM: HOW CAN WE GRAPH PIECEWISE FUNCTIONS? (Day 1)**

1. On the following graph, complete the tables and graph the following piecewise function.

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

x	y

x	y

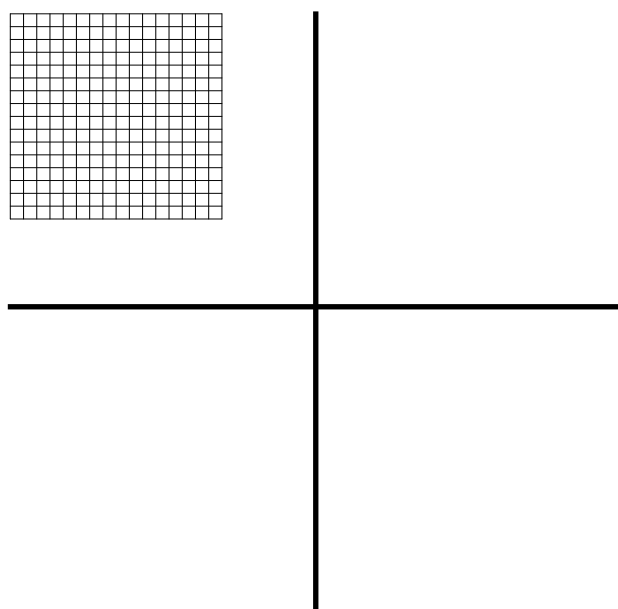
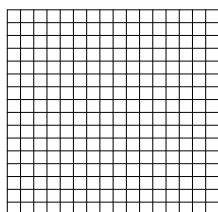


2. On the following graph, complete the tables and graph the following piecewise function.

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

x	y

x	y



a) What is the domain in interval notation?

b) What is the range in interval notation?

c) What is the domain in set builder notation?

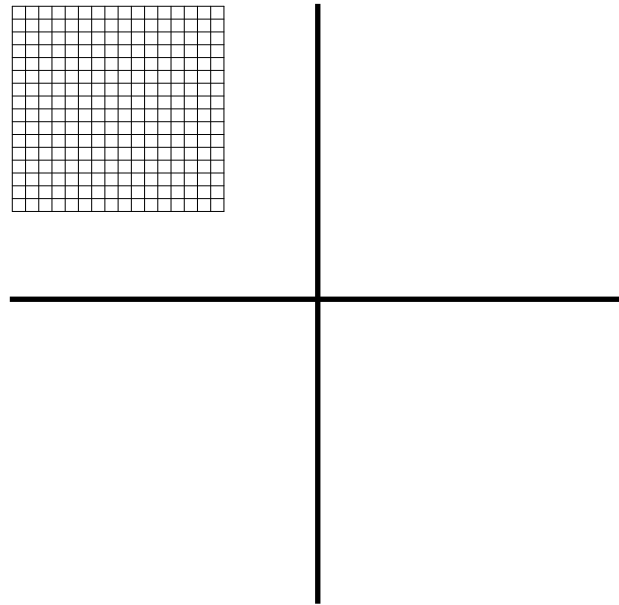
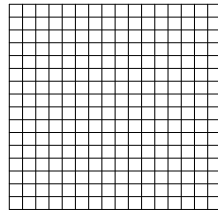
d) What is the range in set builder notation?

3. On the following graph, complete the tables and graph the following piecewise function.

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

x	y

x	y



a) What is the domain in interval notation?

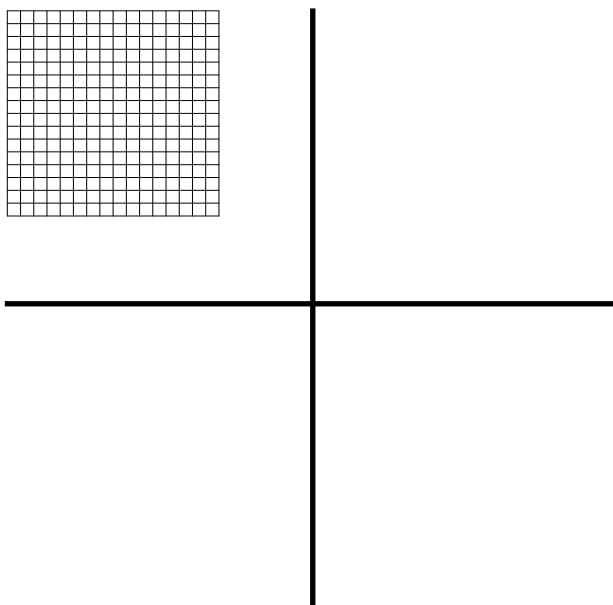
b) What is the range in interval notation?

d) What is the domain in set builder notation?

d) What is the range in set builder notation?

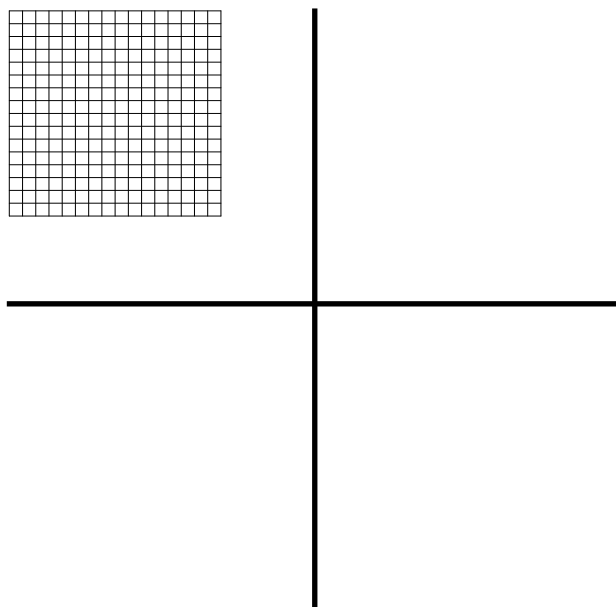
4. On the following graph, complete the tables and graph the following piecewise function.

$$f(x) = \begin{cases} 3, & x < -1 \\ x + 1, & 1 \leq x \leq 4 \end{cases}$$



5. On the following graph, complete the tables and graph the following piecewise function.

$$f(x) = \begin{cases} x + 4, & -6 \leq x < 2 \\ -6, & x = 2 \\ -x + 2, & x > 2 \end{cases}$$



1) What is the value of  $f(2)$  when  $f(x) = \begin{cases} 3x^2 + x - 1, & x \geq 1 \\ 2x, & x < 1 \end{cases}$

(1) 4

(2) 7

(3) 11

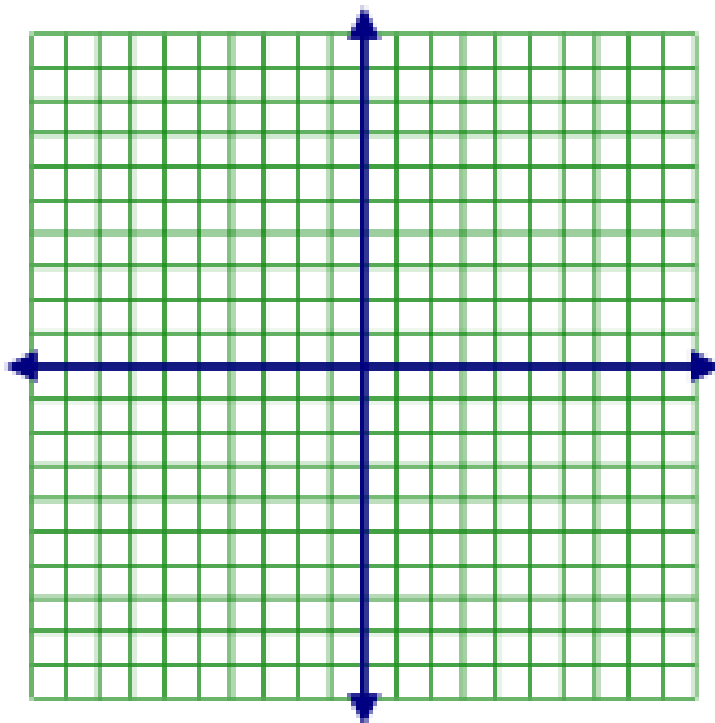
(4) 13

2) On the following graph, complete the tables and graph the following piecewise function.

$$f(x) = \begin{cases} 2x + 1, & \text{if } x < 1 \\ -x + 4, & \text{if } x \geq 1 \end{cases}$$

x	y

x	y



3) Anthropologists use the length of certain bones of human skeleton to estimate the height of the living person. One of these bones is the femur. To estimate the height in centimeters of a female with a femur length of  $x$ , the function  $h(x) = 2.32x + 61.41$  can be used.

a) Find  $h(46)$

b) What does this mean?

4) Answer the following questions based on the given function  $f(x)$ .

a. Write the domain in set builder notation.

b. Write the domain in interval notation.

c. Write the range in set builder notation.

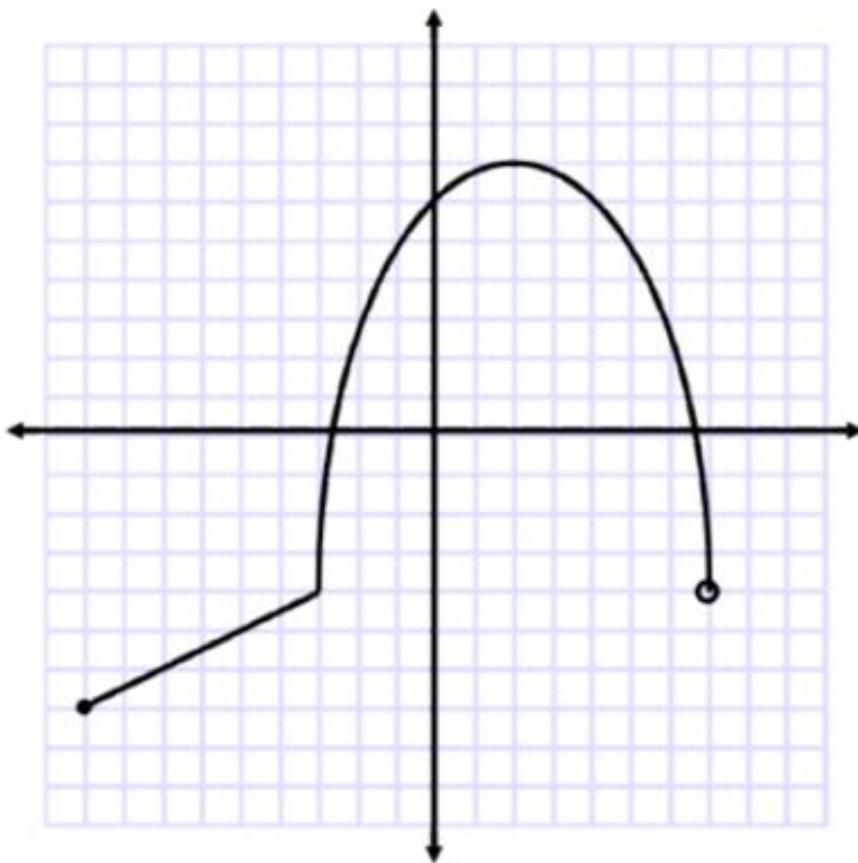
d. Write the range in interval notation.

e. Find  $f(0)$

f. Find  $f(-5)$

g. Find  $x$  if  $f(x) = 7$

h. Find  $x$  if  $f(x) = 5$



**DON'T FORGET TEXTBOOK HW!!**