Name: KEY Hour: _____ Date: _____

NOTES: Domain and Range

Goals: #1 – I can use interval notation to denote a function's domain and range.

#2 – I can determine the domain and range of a function when given a graph.

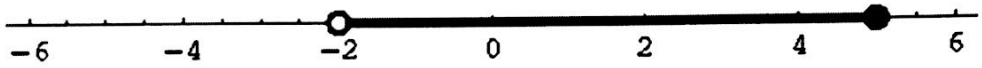
#3 – I can identify the domain and range of any function.



Homework: Domain & Range Worksheet

Exploration #1:

1. How could we represent the set of numbers that are shaded in RED?



(-2, 5]

Review: How do we define domain and range?

DOMAIN: set of all possible inputs (x values)

RANGE: set of all possible outputs (y values)

Notes:

We use interval notation to denote a function's domain and range.

When listing domain and range, we list the smallest possible value on the left and the biggest possible value on the right.

[OR (smallest value , largest value) OR]

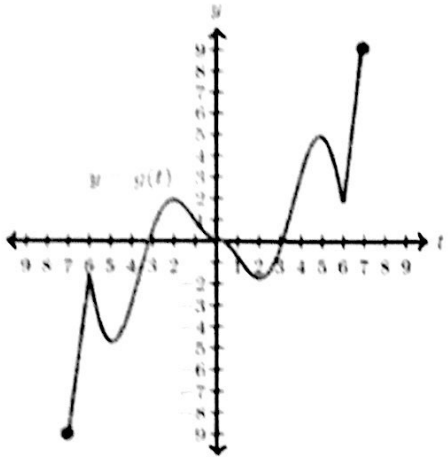
We use closed brackets [,] to include a value in the set.

We use open parantheses (,) to NOT include a value in the set.

Name:_____ Hour: _____ Date: _____

Example #1: Identify the domain and range of the relations graphed below. Use interval notation.

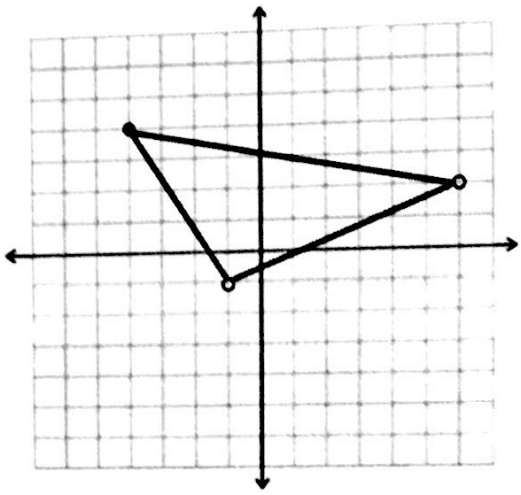
a.



Domain: [-7 7]
smallest x largest x

Range: [-9, 9]

b.

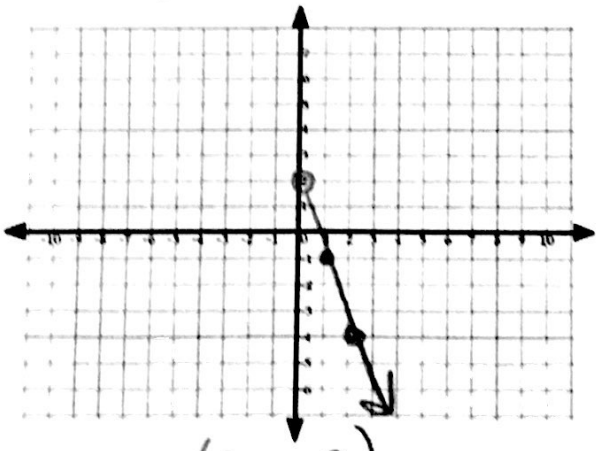


Domain: [-4, 6)

Range: (-1, 4]

Example #2: Graph the function using any method. Identify the function's domain and range using interval notation.

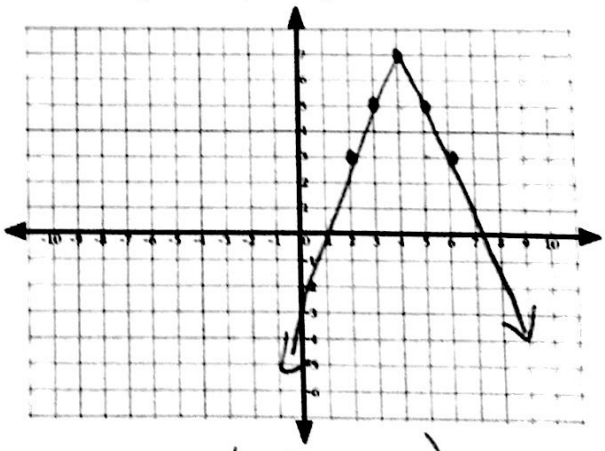
a. $y = -3x + 2$ for $x > 0$



Domain: (0, ∞)

Range: (-∞, 2)

b. $y = -2|x - 4| + 7$



Domain: (-∞, ∞)

Range: (-∞, 7]

Name:_____ Hour:_____ Date:_____

Example #3: Jason had a summer job that paid $7.00 an hour and he worked between 15 and 35 hours every week. His weekly salary can be modeled by the equation: $S = 7h$, where S is his weekly salary and h is the number of hours he worked in a week.

a. Describe a reasonable domain and range for the situation.

Domain: [15, 35]

Range: [105, 245]

$f(15) = 7(15) = 105$

$f(35) = 7(35) = 245$