

Domain and Range

() or [] or (]

WARM UP – Solve and graph solutions on number line. Give final answers in interval notation.

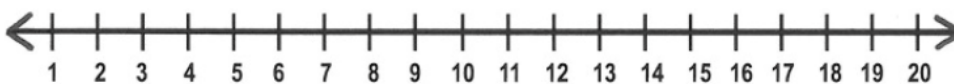
1. $7x - 6 < 5x + 4$



2. $-2m - 6 \leq m + 9$



3. $8 < 2x - 4 \leq 22$



Domain and Range

WARM UP – Solve and graph solutions on number line. Give final answers in interval notation.

$$\begin{array}{r}
 1. \quad 7x - 6 < 5x + 4 \\
 \underline{-5x + 6 \quad -5x + 6} \\
 2x < 10 \\
 x < 5
 \end{array}$$

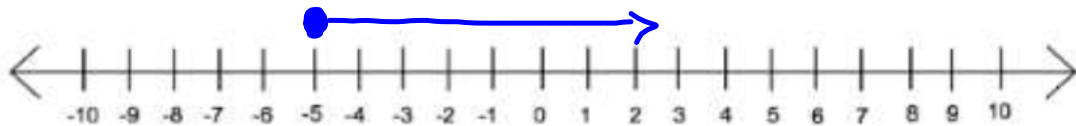
$$\begin{array}{c}
 x < 5 \\
 \boxed{(-\infty, 5)}
 \end{array}$$



mult/div. by. neg switch symbol

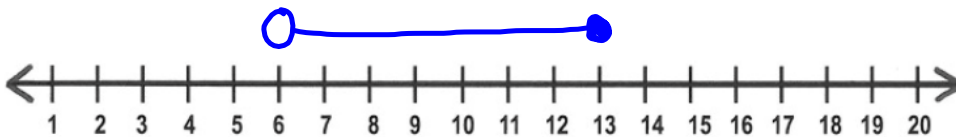
$$\begin{array}{r}
 2. \quad -2m - 6 \leq m + 9 \\
 -15 \leq 3m \\
 -5 \leq m \\
 m \geq -5
 \end{array}$$

$$\begin{array}{c}
 m \geq -5 \\
 \boxed{[-5, \infty)}
 \end{array}$$



$$\begin{array}{r}
 3. \quad 8 < 2x - 4 \leq 22 \\
 \underline{+4 \quad +4 \quad +4} \\
 12 < 2x \leq 26 \\
 6 < x \leq 13
 \end{array}$$

$$\begin{array}{c}
 6 < x \leq 13 \\
 \boxed{(6, 13]}
 \end{array}$$



Domain and Range Notes

Interval Notation Review

Set Builder

Number Line

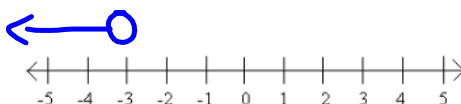
Interval Notation

$x \geq 2$



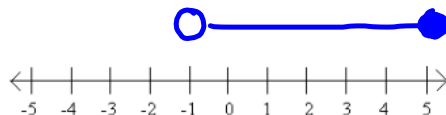
$[2, \infty)$

$x < -3$



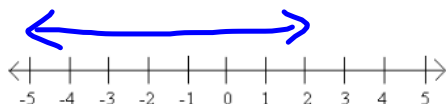
$(-\infty, -3)$

$-1 < x \leq 5$



$(-1, 5]$

\mathbb{R} (all real numbers)



$(-\infty, \infty)$

or \mathbb{R}

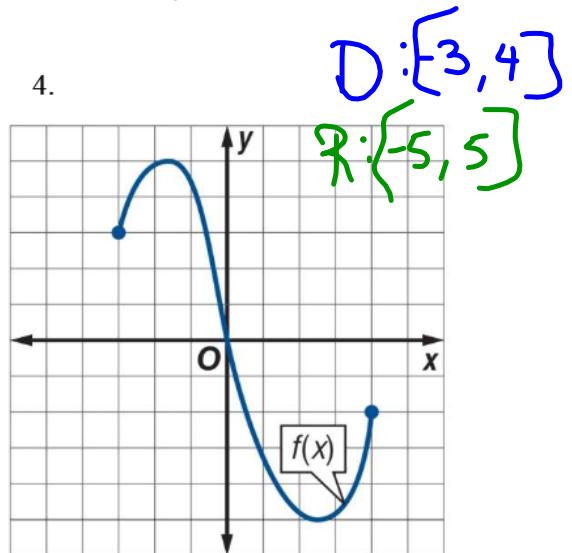
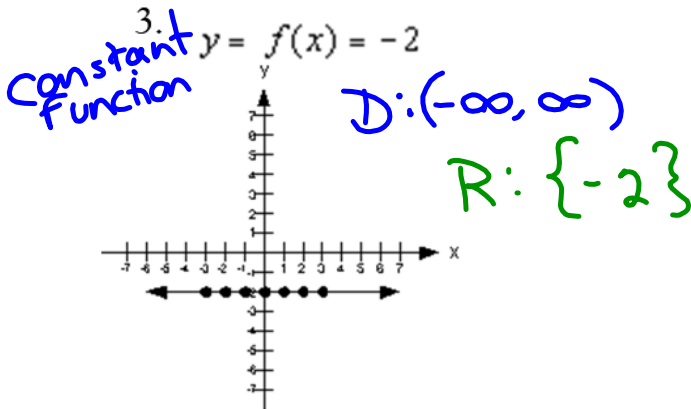
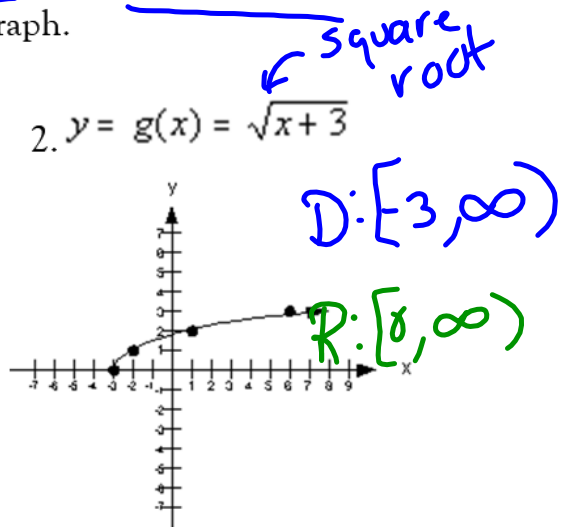
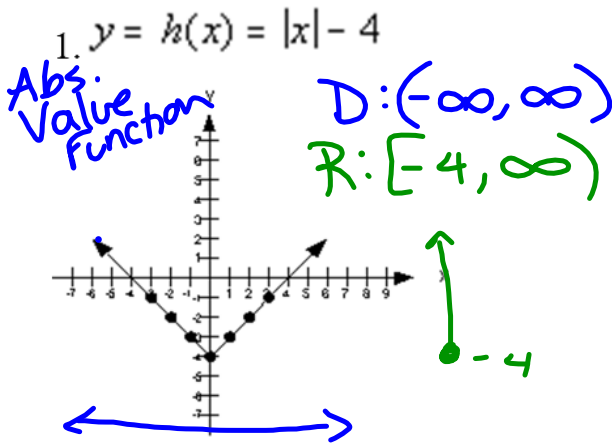
$()$ on holes (open circles), ∞ (- or +), or \neq (not equal to)

$[]$ on everything else

Domain and Range Notes

Identifying Domain and Range from a graph:

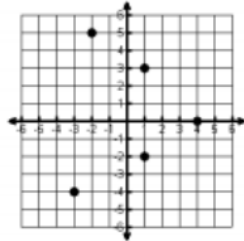
- Domain is the set of input (x) values on the x-axis (horizontal axis) that correspond to a point on the graph.
- Range is the set of output (y) values on the y-axis (vertical axis) that correspond to a point on the graph.



Domain and Range Notes
 V.L.T. NO "x" repeaters
 U = Union

State if the graph is a function. Identify the domain and range – interval notation.

1.

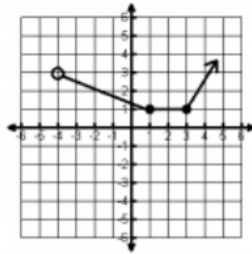


not a function

$$D: \{-3\} \cup \{-2\} \cup \{1\} \cup \{4\}$$

$$R: \{-4\} \cup \{-2\} \cup \{0\} \cup \{3\} \cup \{5\}$$

2.

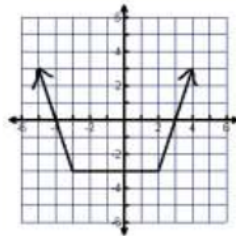


yes, function

$$D: (-4, \infty)$$

$$R: [1, \infty)$$

3.

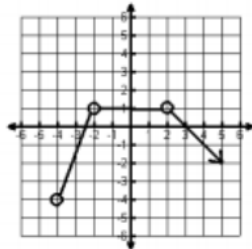


yes, function

$$D: (-\infty, \infty)$$

$$R: [-3, \infty)$$

4.



yes, function

$$D: (-4, -2) \cup (-2, 2) \cup (2, \infty)$$

$$R: (-\infty, 1]$$

Domain and Range - Graphs

Identify the domain and range of the function from the graph. Also tell whether or not the graph represents a function.

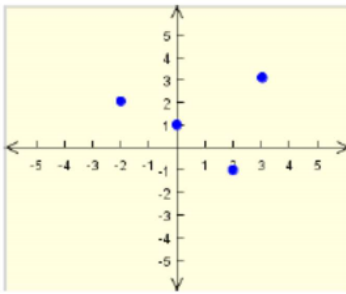


Figure 7

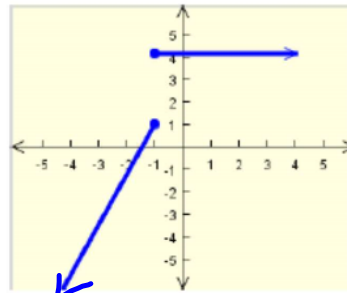


Figure 8

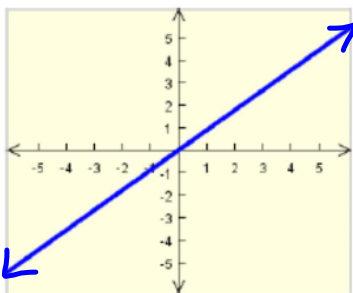


Figure 9

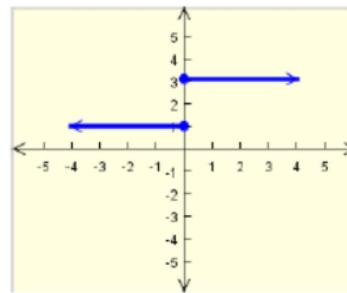


Figure 10

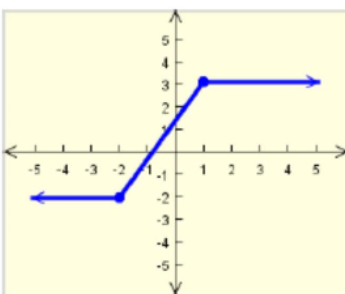


Figure 11

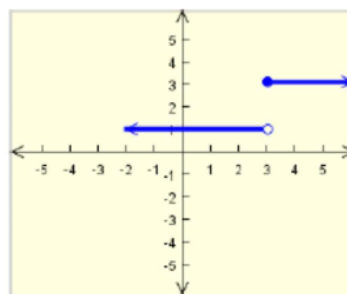


Figure 12

Domain and Range - Graphs

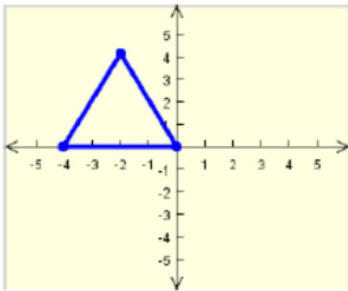


Figure 13

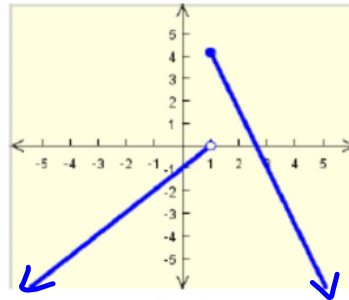


Figure 14

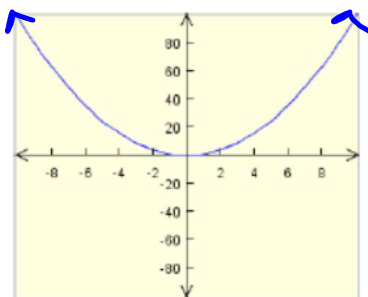


Figure 15

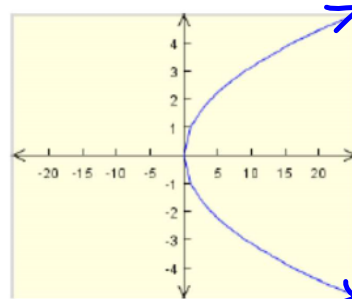


Figure 16

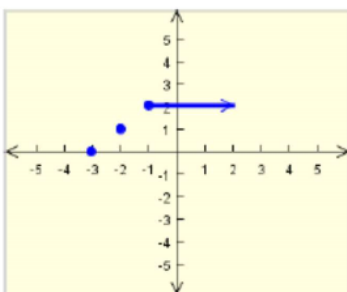


Figure 17

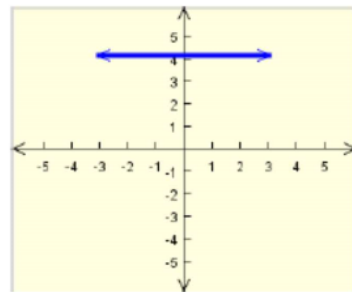


Figure 18

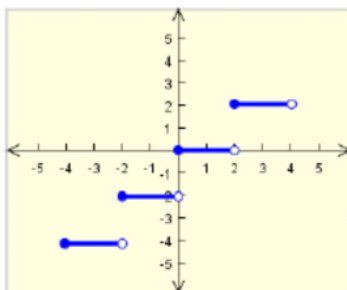


Figure 19

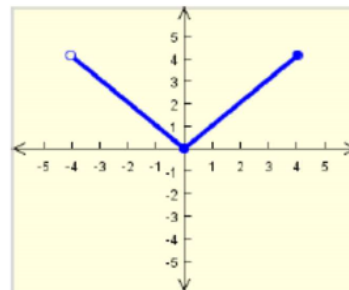


Figure 20

