

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Characteristics of Graphs

### Interval Notation:

Represents an interval as a \_\_\_\_\_. The numbers are the endpoints of the interval. \_\_\_\_\_ and/or \_\_\_\_\_ are used to show excluded or included.

**Interval :**



### Domain and Range:

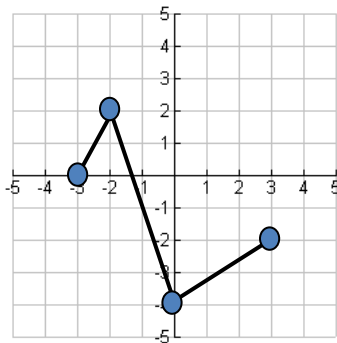
**Domain:** The \_\_\_\_\_ that are contained in the graph. Write it from \_\_\_\_\_.

**Range:** The \_\_\_\_\_ that are contained in the graph. Write it from \_\_\_\_\_.

### Examples:

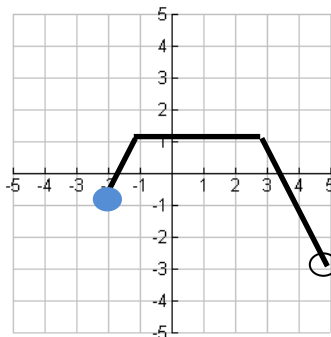
1) D: \_\_\_\_\_

R: \_\_\_\_\_



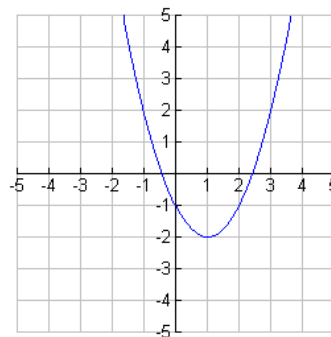
2) D: \_\_\_\_\_

R: \_\_\_\_\_



3) D: \_\_\_\_\_

R: \_\_\_\_\_



### Interval of Increasing and Decreasing:

Always read from \_\_\_\_\_ to \_\_\_\_\_

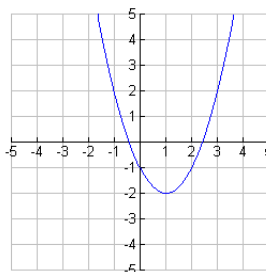
- If your finger is going up, the graph is \_\_\_\_\_.
- If going down, the graph is \_\_\_\_\_.

### Example:

Inc: \_\_\_\_\_

Dec: \_\_\_\_\_

**\*\*Only use Parentheses!\*\***



### Extrema:

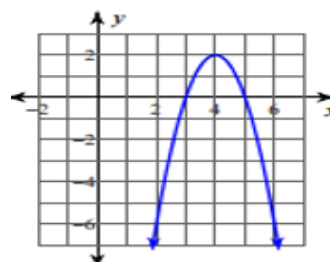
**Maximum value:** the \_\_\_\_\_ point seen in the data or on the graph.

**Minimum value:** the \_\_\_\_\_ point seen in the data or on the graph.

**Extrema:** \_\_\_\_\_

**Axis of Symmetry:** \_\_\_\_\_

**Zeros/Roots/Solutions**



**Intercepts**

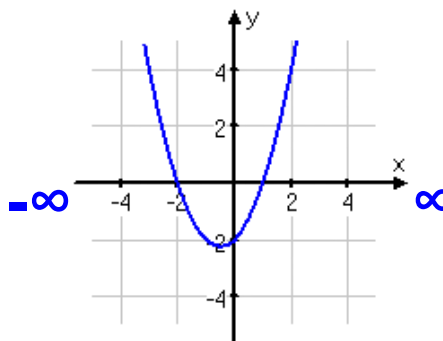
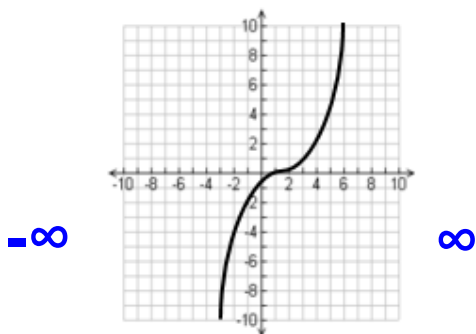
- **x-intercept** – the point at which the line intersects the \_\_\_\_\_. (      )
- **y-intercept** – the point at which the line intersects the \_\_\_\_\_. (      )

**End Behavior:**

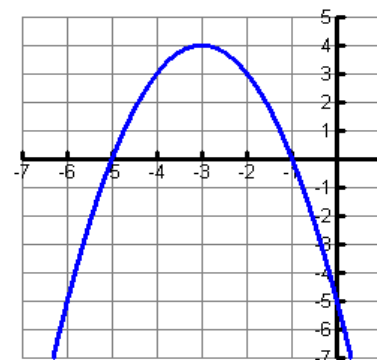
- What a function keeps doing after it leaves the graph
- \_\_\_\_\_ : As x goes to the right, where does y go?
- \_\_\_\_\_ : As x goes to the left, where does y go?

1)  $x \rightarrow \underline{\hspace{1cm}}$   $f(x) \rightarrow \underline{\hspace{1cm}}$   
 $x \rightarrow \underline{\hspace{1cm}}$   $f(x) \rightarrow \underline{\hspace{1cm}}$

2)  $x \rightarrow \underline{\hspace{1cm}}$   $f(x) \rightarrow \underline{\hspace{1cm}}$   
 $x \rightarrow \underline{\hspace{1cm}}$   $f(x) \rightarrow \underline{\hspace{1cm}}$



- a. Domain: \_\_\_\_\_
- b. Range: \_\_\_\_\_
- c. Extrema: \_\_\_\_\_
- d. Axis of Sym: \_\_\_\_\_
- e. Increasing: \_\_\_\_\_
- f. Decreasing: \_\_\_\_\_
- g. Y-Intercept: \_\_\_\_\_
- h. Solutions: \_\_\_\_\_
- i. End Behavior:  $x \rightarrow \underline{\hspace{1cm}}$   $f(x) \rightarrow \underline{\hspace{1cm}}$   
 $x \rightarrow \underline{\hspace{1cm}}$   $f(x) \rightarrow \underline{\hspace{1cm}}$



\*\* j. Rate of Change [-3, 0] \_\_\_\_\_ [-6, -5] \_\_\_\_\_