

# Interval Notation

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

Date: \_\_\_\_\_ Block: \_\_\_\_\_

Mrs. Mistron

Today we will use interval notation to write the domain and range of a function and tell where the function is increasing or decreasing.

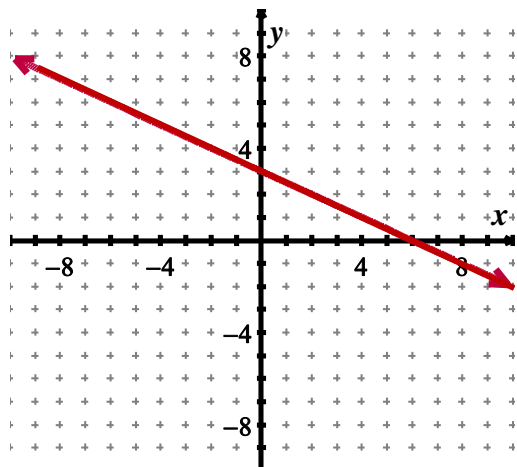
What is the domain of a function?

What is the range of a function?

## How to find domain and range by looking at a graph:

1. See how far the graph goes from the left to the right  
(\_\_\_\_\_)
2. See how far the graph reaches from the bottom to the top  
(\_\_\_\_\_)
3. Look for discontinuities (holes or jumps in the graph)

EXAMPLE ONE → Find the domain and range of a linear function



In words:

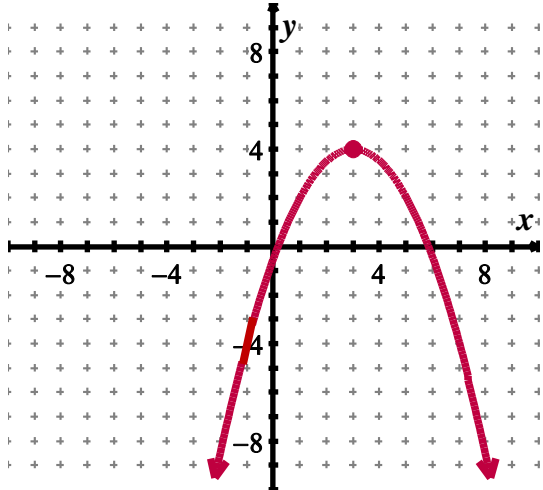
Set Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Interval Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

EXAMPLE TWO → Find the domain and range of a quadratic function



In words:

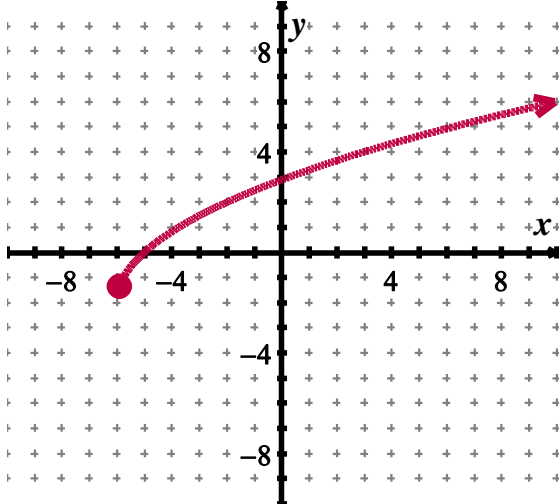
Set Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Interval Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

EXAMPLE THREE → Find the domain and range of a radical function



In words:

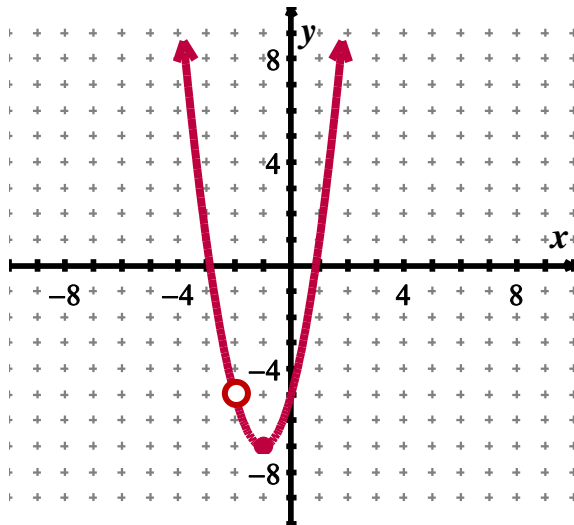
Set Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Interval Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

EXAMPLE FOUR → Find the domain and range of a function with a hole



In words:

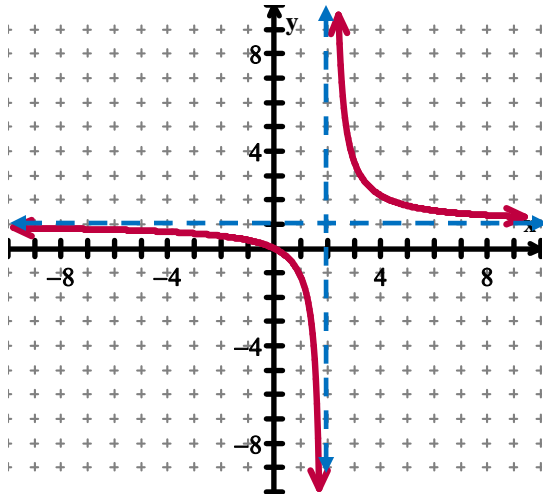
Set Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Interval Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

EXAMPLE FIVE → Find the domain and range of a function with asymptotes



In words:

Set Notation:

Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Interval Notation:

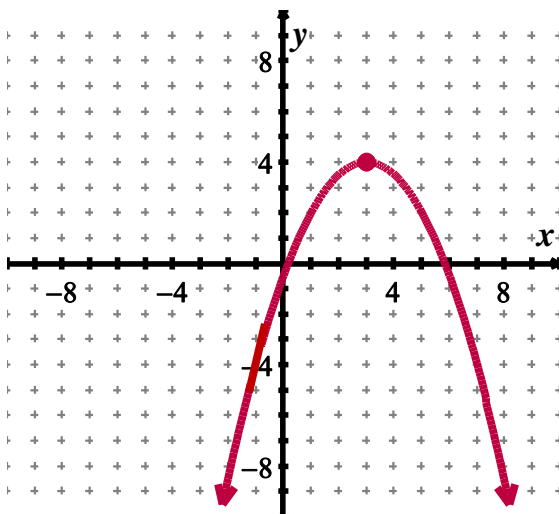
Domain: \_\_\_\_\_ Range: \_\_\_\_\_

### Increasing and Decreasing Functions

When moving from left to right, a function is increasing if the y-values are getting bigger and decreasing if the y-values are getting smaller.

Increasing will look like a \_\_\_\_\_ slope while decreasing will look like \_\_\_\_\_ slope.

EXAMPLE FIVE → Describe where the function is increasing and decreasing.

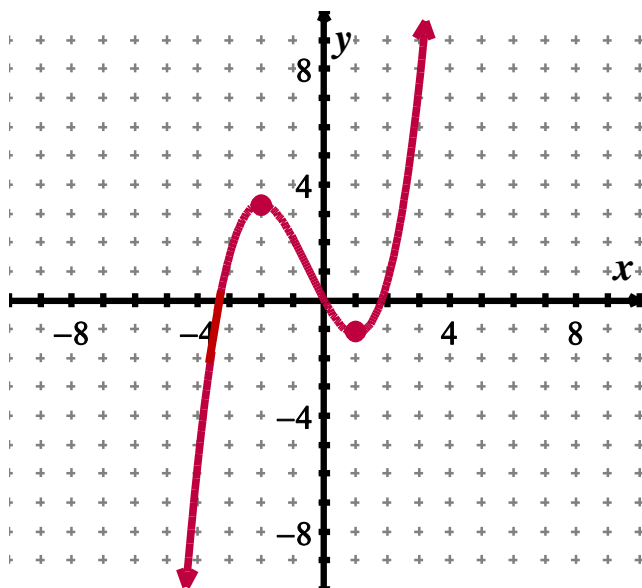


Special Point:

Interval(s) of increasing:

Interval(s) of decreasing:

EXAMPLE SIX → Describe where the function is increasing and decreasing.



Special Points:

Interval(s) of increasing:

Interval(s) of decreasing:

### QUESTION OF THE DAY:

Why do we use x-values when describing the intervals of increasing and decreasing?

Homework → Worksheet