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?