

10.1a: Domain and Range of a Function

“I WILL ...

Identify the domain and range of a quadratic.”

I. Open vs Closed Dot

- A. Inequality is an equation where the variable does not equal to each other
- B. $>$, $<$, or \neq requires the dot being OPEN hole
- C. \geq , \leq , or $=$ required the dot being CLOSED hole

II. To Write Inequalities

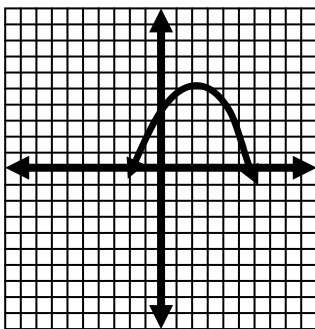
- A. Simple Inequalities (only ONE starting or ending point)
 - 1. Follow the arrow
 - 2. Variable Should always go first
- B. Compound Inequalities (more than ONE starting or ending point)
 - 1. Always use $<$ or \leq in between the variable
 - 2. Smallest number ALWAYS comes first
 - 3. Biggest number ALWAYS comes last

III. Determining the Range

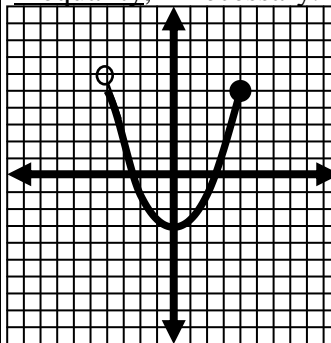
- A. Plug in the x coordinates to get the y -values
- B. If $f(x)$ is given, it is called Function Notation. Still plug in the x to get the y -values.

IV. Model Problems

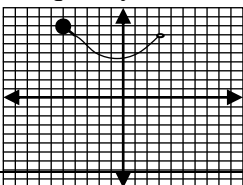
Ex 1: What is the domain and range of this function? Write them in Compound Inequality, if necessary.



Ex 2: What is the domain and range of this function? Write them in Compound Inequality, if necessary.



Your Turn: What is the domain and range of this function? Write them in Compound Inequality, if necessary.



<p>Ex 3: Find the range of the following function, $g(x) = 2x^2 - 6x$ given the domain, $\{-2, 0, 2\}$. Show all steps.</p>	<p>Ex 4: Find the range of the following function, $g(x) = (1/2)x^2 - 1$ given the domain, $\{-6, -3, 0, 4, 5\}$. Show all steps.</p>
<p>Your Turn: Find the range of the following function, $g(x) = (1/4)x^2 + 4$ given the domain, $\{-4, 0, 8\}$. Show all steps.</p>	<p>Ex 5: If $f(x) = 3x^2 + 2x - 10$, what is $f(2)$?</p>
<p>Ex 6: If $f(x) = 4x^2 - 7$, what is $f(-1)$?</p>	<p>Your Turn: If $f(x) = 2x^2 - 7x$, what is $f(3)$?</p>