

Functions/Regression – Interval Notation with Domain and Range

Writing Domain/Range – Inequality Notation Vs. Interval Notation

inequality notation → rewriting expressions using the six inequality symbols which are ...

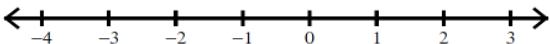
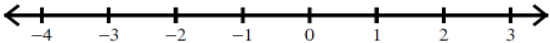
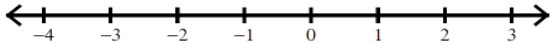
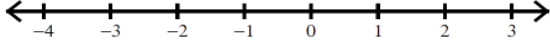



_____, _____, _____, _____, _____, and _____

interval notation → rewriting inequalities using _____, _____

and/or both with grouping symbols such as _____ and _____

- brackets represents _____ such as _____, _____, or _____
- parentheses represents _____ such as _____, _____, or _____
- If you have more than 1 interval (or “area of shading”), then you must use _____

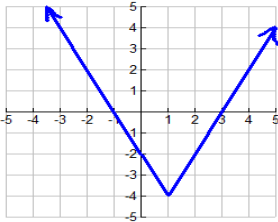
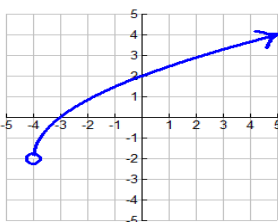
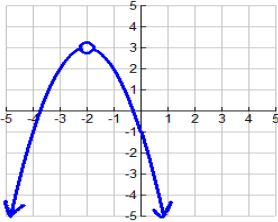
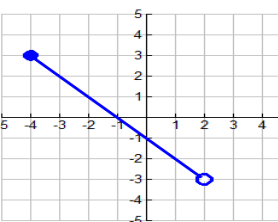
Example 1: Complete the chart below using the appropriate notation(s).

	Inequality Notation	Interval Notation	Graph (on a number line)
a.)	$x > 2$		
b.)	$x \leq -1$		
c.)	$-4 < x \leq 0$		
d.)	all real numbers (IR)		
e.)	$\mathbb{R}, x \neq -3$		
f.)	$x < -2$ or $x \geq 1$		
g.)	$x \geq -3, x \neq 0$		

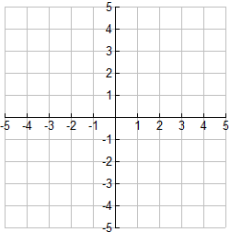
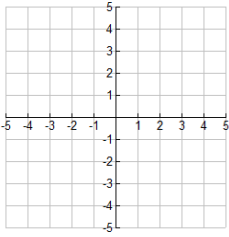
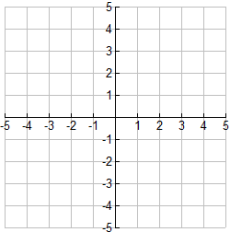
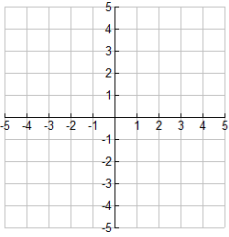
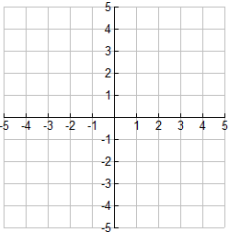
– **domain (of a graph)** → set of all _____ in which a function is defined (look _____)

– **range (of a graph)** → set of all _____ in which a function is defined (look _____)

Example 2: Determine the domain and range (using both notations) of each given graph.

Example 2a	Example 2b	Example 2c	Example 2d
			
D/R – Using an Interval D: _____ R: _____	D/R – Using an Interval D: _____ R: _____	D/R – Using an Interval D: _____ R: _____	D/R – Using an Interval D: _____ R: _____

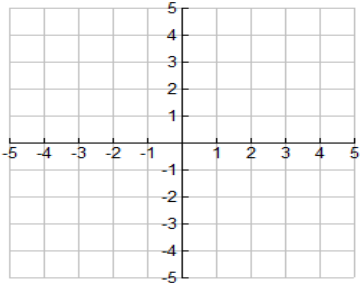
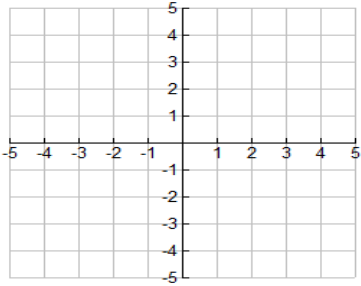
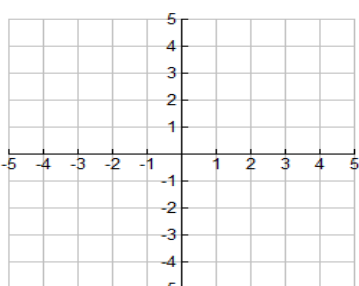
Basic Parent Functions For Transformations

Quadratic	Cubic	Absolute Value	Cube Root	Square Root
				
Eq: _____	Eq: _____	Eq: _____	Eq: _____	Eq: _____
D: _____	D: _____	D: _____	D: _____	D: _____
R: _____	R: _____	R: _____	R: _____	R: _____

Transformation # 1 – Vertical Translations	Transformation # 2 – Horizontal Translations
<p>If have $y = f(x) \pm d$ then you can have ...</p> <ul style="list-style-type: none"> + d which means _____ – d which means _____ 	<p>If have $y = f(x \pm c)$ then you can have ...</p> <ul style="list-style-type: none"> + c which means _____ – c which means _____

Example 3: Do the following –

- Draw in the original parent graph in **BLACK**.
- State all the transformations in the given function.
- Graph the function based on its transformations in **COLOR**.
- State the domain and range of graphed/transformed function only using interval notation.

Example 3a	Example 3b	Example 3c
<p>Given Function: $y = x + 2 - 3$</p> <p>Transformations: _____</p>  <p>Domain (of given funct): _____</p> <p>Range (of given funct): _____</p>	<p>Given Function: $y = (x - 3)^3 + 1$</p> <p>Transformations: _____</p>  <p>Domain (of given funct): _____</p> <p>Range (of given funct): _____</p>	<p>Given Function: $y = \sqrt{x + 2} + 2$</p> <p>Transformations: _____</p>  <p>Domain (of given funct): _____</p> <p>Range (of given funct): _____</p>