Introduction to Transformations

Name KEY

Graph the equations using your graphing calculator. Make a sketch of what you see.

Parent Graph: y = x Name:	Parent Graph: $y = x $ Name:	Parent Graph: $y = x^2$ Name:	Parent Graph: $y = \sqrt{x}$ Name:
6- 5- 4- 3- 2- 1-	6- 5- 4- 3- 2- 1-	6 5 4 4 3 2 2 3 1 4 4 5 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	5- 4- 3- 2- 1-
-6-5-4-3-2-0 1 2 3 4 5 6 x -2- -3- -4- -5- -6-	-6-5-4-3-2-10 1 2 3 4 5 6 x -23456-	-6 -5 -4 -3 -2 -10 1 2 3 4 5 6 2 -2 -3 -4 -5 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6	-6 -5 -4 -3 -2 -10 1 2 3 4 5 6 -3 -4 -5 -6 -5 -6 -6 -5 -4 -3 -2 -10 1 2 3 4 5 6
Characteristics of Parent:	Characteristics of Parent:	Characteristics of Parent:	Characteristics of Parent:
Zine Through Origin (y-int =0)	Vertex an origin	Parabola V vertex on origin	1/2 Sidoways Parabola
Slope: 1	slope =1	opens up	startan origin goed up
Goes up	opens up		
Adding and Subtracting			
y = x + 3	y = x + 3	$y = (x-2)^2$	$y = \sqrt{x+3}$
-6-5-4-3-2-10 1 2 3 4 5 6 x -23456-	-6 -5 -4 -3 -2 -10 1 2 3 4 5 6 x -23456-	-6 -5 -4 -3 -2 -10 1 2 3 4 5 6 -5 -4 -3 -2 -10 1 2 3 4 5 6 -5 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6	-6-5-4-3-2-10 1 2 3 4 5 6 -2-3-4-5-6-6-
How is this graph different	How is this graph different from its parent?	How is this graph different from its parent?	How is this graph differen
moved up 3	moved up 3	moved right 2	from its parent? moved left 3
1. What does adding or subtracting do to the graph?	A. Stretches or Shrinks the graph compared to its parent graph	B. Translates the graph (moves it up/down or left/right) compared to the parent graph	C. Reflects the graph ove the x-axis or y-axis

the parent graph

(choose one answer)

Multiplying by a			
negative:			
y = -x	y = - x	$y = (-x)^2$	$y = \sqrt{(-x)}$
6-5-4-3-2-10 2 3 4 5 6 x -6-5-4-3-2-10 2 3 4 5 6 x -5-4-3-2-10 2 3 4 5 6 x	-6 -5 -4 -3 -2 -10 2 3 4 5 6 x -5 -4 -3 -2 -10 2 3 4 5 6 x -5 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6	6-5-4-3-2-10 1 2 3 4 5 6 2 -5 -4 -3 -2 -10 1 2 3 4 5 6 2 -5 -4 -5 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6	6-5-4-3-2-10-12-3-4-5-6-3-4-4-5-6-5-4-3-2-10-12-3-4-5-6-5-4-3-2-10-12-3-4-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-6-5-4-3-2-10-12-3-4-5-6-5-6-5-6-5-6-5-6-5-6-5-6-5-6-5-6-5
Differences from parent:	Differences from parent:	Differences from parent:	Differences from parent:
opposite direction flipped over x or y - 043	opens down flipped over x-axis	Same	6000 lest flipped over y-axis
flipped over x or y -ans	flipped over x-axis	Supped wer grans	Fupped way or A)
2. What does multiplying by a negative do to the graph? (choose one answer)	A. Stretches or Shrinks the graph compared to its parent graph	B. Translates the graph (moves it up/down or left/right) compared to the parent graph	C. Reflects the graph over the x-axis or y-axis
Multiplying by a positive number:			
y = 2x y 6 5 4 3 2 1 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 x -2 -3 -4 -5 -6	$y = 3 x $ $\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$y = \frac{1}{2}x^{2}$ $\frac{1}{2}x^{2}$	$y = 3\sqrt{x}$ $y = 3\sqrt{x}$ $-6 - 5 - 4 - 3 - 2 - \frac{10}{11}$ $-2 - 3 - 4 - 5 - 6 - 6$
Differences from parent:	Differences from parent:	Differences from parent:	Differences from parent:
Steeper	steeper/norrower	wider/shallower	Steeper
2. What does multiplying by a positive number do to the graph?	A. Stretches or Shrinks the graph compared to its parent graph	B. Translates the graph (moves it up/down or left/right) compared to the parent graph	C. Reflects the graph over the x-axis or y-axis
(choose one answer)			