## **Graphing Techniques: Transformations -- Characteristics Worksheet**

	Horizontal Shift		Vertical Shift		
	How does the	It shifts	How does the	It shifts	
	graph change?	or	graph change?	or	
	How does the	Replace all $x$ with	How does the	Add to the	
	eq'n change?	where	eq'n change?	equation	
		tells the			
		direction of shift			
	Which coord's	Add to all the	Which coord's	Add to all the	
	change? How?	coordinates	_	coordinates	
		Compression	Vertical C		
	How does the	It compresses	How does the	It compresses	
	graph change?	towards the	graph change?	towards the	
NS		axis		axis	
011	How does the	Replace all $x$ with	How does the	Multiply the	/ER
AA.	eq'n change?	where	eq'n change?	equation by,	TC
JRN		>1		with 0 < <	. A
SF(	Which coord's	Multiply all of the	Which coord's	Multiply all of the	TR/
N A	change? How?	coordinates	change? How?	coordinates	VERTICAL TRANSFO
ORIZONTAL TRANSFORMATIONS	by Horizontal Stretch		by Vertical Stretch		
				I	RMATIONS
NO	How does the	It stretches away	How does the	It stretches away	AT
RIZ	graph change?	from theaxis	graph change?	from theaxis	0
임	How does the	Replace all x with	How does the	Multiply the	S
	eq'n change?	where	eq'n change?	equation by, with > 1	
	Which coord's	0 < < Multiply all of the	Which coord's		
	change? How?	coordinates	change? How?	coordinates	
	change: now:	by	change: How:	by	
	Horizontal ( $\gamma$	-axis) Reflection	Vertical ( <i>x-a</i>	axis) Reflection	
	How does the	Spin it around	How does the	Spin it around	
	graph change?	theaxis	graph change?	theaxis	
	How does the	Replace all $x$ with	How does the	Multiply the	
	eq'n change?	-	eq'n change?	equation by	
	eq ii change:			·	
	Which coord's	Multiply all of the	Which coord's	Multiply all of the	
		Multiply all of thecoordinates	Which coord's change? How?	Multiply all of thecoordinates	

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