

Name:
Date:

Transforming Functions Worksheet

Summary of Transformations

Transformation	Appearance in Function	Transformation of Point
Vertical Translation	$f(x) \rightarrow f(x) + d$	$(x,y) \rightarrow (x,y+d)$
Horizontal Translation	$f(x) \rightarrow f(x - c)$	$(x,y) \rightarrow (x+c, y)$
Vertical Stretch/Compression	$f(x) \rightarrow af(x)$	$(x,y) \rightarrow (x, ay)$
Reflection in x-axis	$f(x) \rightarrow -f(x)$	$(x,y) \rightarrow (x,-y)$
Horizontal Stretch/Compression	$f(x) \rightarrow f(kx)$	$(x,y) \rightarrow \left(\frac{x}{k}, y\right)$
Reflection in y-axis	$f(x) \rightarrow f(-x)$	$(x,y) \rightarrow (-x,y)$

Order of Transformations

1. Stretches/Compressions and Reflections
2. Translations

1. Given the graph of $f(x)$, sketch the graph of the following functions, and state the domain and range for each:

a. $2f(x - 5)$

b. $-f(2x) + 3$

c. $\frac{1}{2}f(-x + 4) - 2$
(Remember to factor first!)

