

Parent Functions and Transformations Ch 1.2 and 1.3

Parent function *Most simple form of an equation + graph which represents a specific function*

transformations *Movements applied to the parent functions to create new graphs + equations*

Remember
 $f(x) = mx + b$
 $y = mx + b$
 $f(x) = y$

Core Concepts

Parent Functions

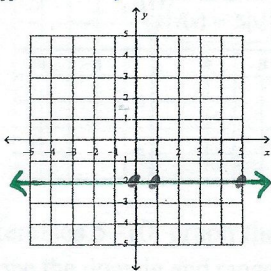
given b = -2

Family Constant

Rule $f(x) = b$

$y = b$

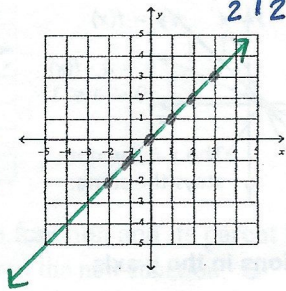
Graph



Family Linear

Rule $f(x) = x$

$y = x$

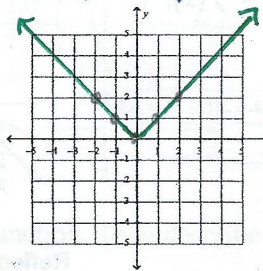


x	-2	-1	0	1	2
y	2	1	0	1	2

Family Absolute Value

Rule $f(x) = |x|$

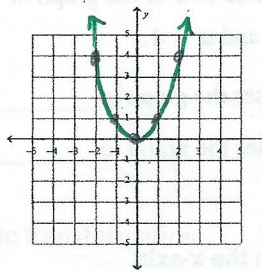
$y = |x|$



Family Quadratic

Rule $f(x) = x^2$

$y = x^2$



x	-2	-1	0	1	2
y	4	1	0	1	4

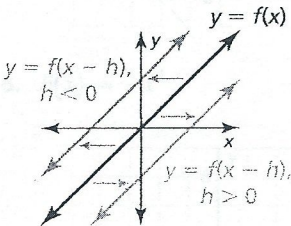
Domain

Range

Transformations:

Horizontal Translations

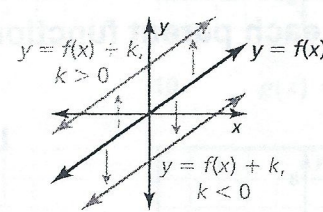
The graph of $y = f(x - h)$ is a horizontal translation of the graph of $y = f(x)$, where $h \neq 0$.



$y = f(x - h)$ shifts the graph _____
 $y = f(x + h)$ shifts the graph _____

Vertical Translations

The graph of $y = f(x) + k$ is a vertical translation of the graph of $y = f(x)$, where $k \neq 0$.



$y = f(x) + k$ shifts the graph _____
 $y = f(x) - k$ shifts the graph _____