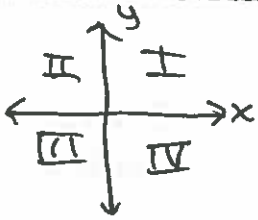
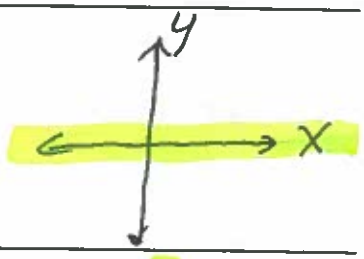
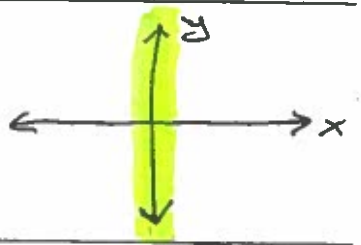
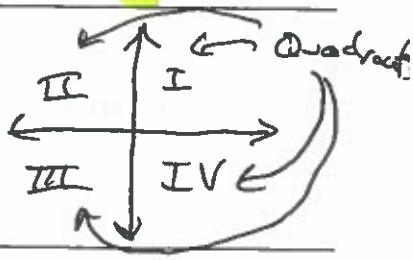
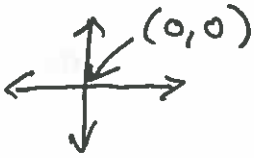
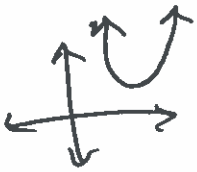
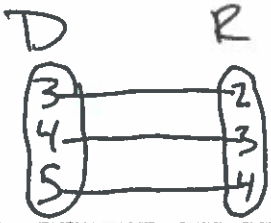
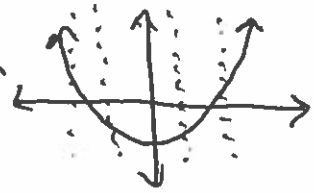
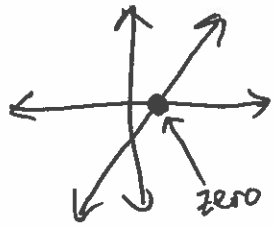
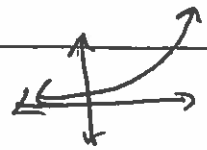
RELATIONS & FUNCTIONS DICTIONARY

Graphing Basics	DEFINITION	EXAMPLE OR VISUAL
Coordinate Plane	Formed by the intersection of two number lines, the horizontal axis and the vertical axis	
x-axis	horizontal axis on a coordinate plane	
y-axis	vertical axis on a coordinate plane	
Quadrants	the four regions into which the x-axis and the y-axis separates the coordinate plane	
Origin	the point at which the x and y axis intersect on the coordinate plane (0,0)	
Ordered Pair	set of numbers, or coordinates written in the form (x,y)	(4, 3)
x-Coordinate	the x-value of an ordered pair, represents the horizontal placement of the point	x (5, 3)

y-Coordinate	the y-value of an ordered pair, represents the vertical placement of the point	$(3, \overset{y}{2})$
Discrete Graph	a graph that consists of points that are not connected	
Continuous Graph	a function graphed with a line or smooth curve	
Relation	a set of ordered pairs	$\{(3,2), (4,3), (5,4)\}$
Domain	set of first numbers (x-values) of the ordered pairs of a relation	$D = \{3, 4, 5\}$
Range	set of second numbers (y-values) of the ordered pairs of a relation	$R = \{2, 3, 4\}$
Mapping	illustrates how each element of the domain is paired with an element of the range	

Functions	DEFINITION	EXAMPLE OR VISUAL
Function	relation in which each element of the domain is paired with exactly one element of the range	

Function Notation	way to name a function that is defined by an equation	$f(x) = 2x$
Input	a value substituted for an x-value in a function	$x = 3 \leftarrow$ input $f(x) = 5x$ $f(3) = 5 \cdot 3 = 15$
Output	The result of substituting a value into a function	output
Vertical Line Test	if any vertical line passes through the graph of a relation no more than once, then it is a function	
Zeros	x-intercepts of the graph of a function points where $f(x) = 0$	

	DEFINITION	EXAMPLE OR VISUAL
Independent Variable	a variable whose variation does not depend on that of another	often X
Dependent Variable	a variable whose variation does depend on that of another	often Y
Increasing Graph	a graph whose y-value increases as the x-value increases	
Decreasing Graph	a graph whose y-value decreases as the x-value increases