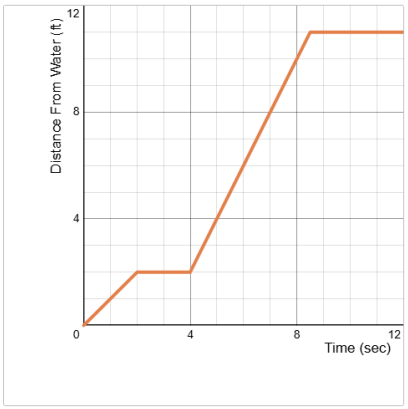
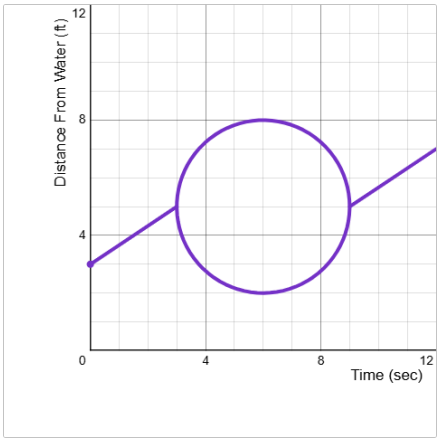
MSLC 1148 Workshop: What is a Function?

Problem 1: Turtles Animation



What will the turtle do?



What will the turtle do?

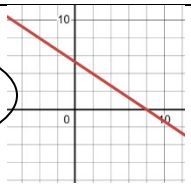
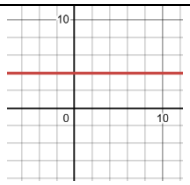
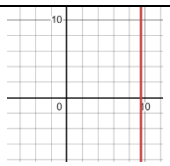
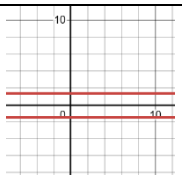
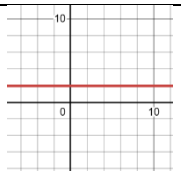
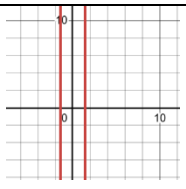
Which graph is the graph of a function?

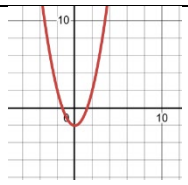
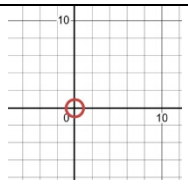
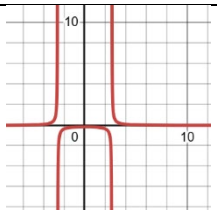
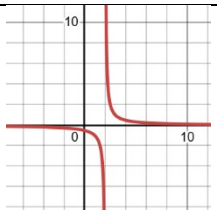
Problem 2: Which Relations Are Functions?

Circle equations in which y is a function of x. The first and third are done for you.

Compare your answers to a neighbor's. **Make sure you're confident in your answers!**

For each **function**, rewrite as $y = \ldots$ if necessary and find the domain, x-intercept, and y-intercept. **Don't** do this for non-functions.

Equation	Graph	$y = \ldots$	Domain	x-intercept	y-intercept
$2x + 3y = 16$		$y = \frac{16}{3} - \frac{2}{3}x$	$(-\infty, \infty)$	(8, 0)	(0, 16/3)
$y = 4$					
~~$2x = 19$~~		N/A	N/A	N/A	N/A
$y^2 = 2$					
$y^3 = 8$					
$x^2 = 2$					

$y = x^2 - 2$					
$x^2 + y^2 = 1$					
$y = \frac{1}{x^2 - 7}$					
$y = \frac{1}{x - 2}$					

Use for scratch work.

Problem 3: Function Properties of Lines

Consider the function given by $g(x) = -1 - 2x$.

Its x-intercept is _____.

Its y-intercept is _____.

Its slope is _____.

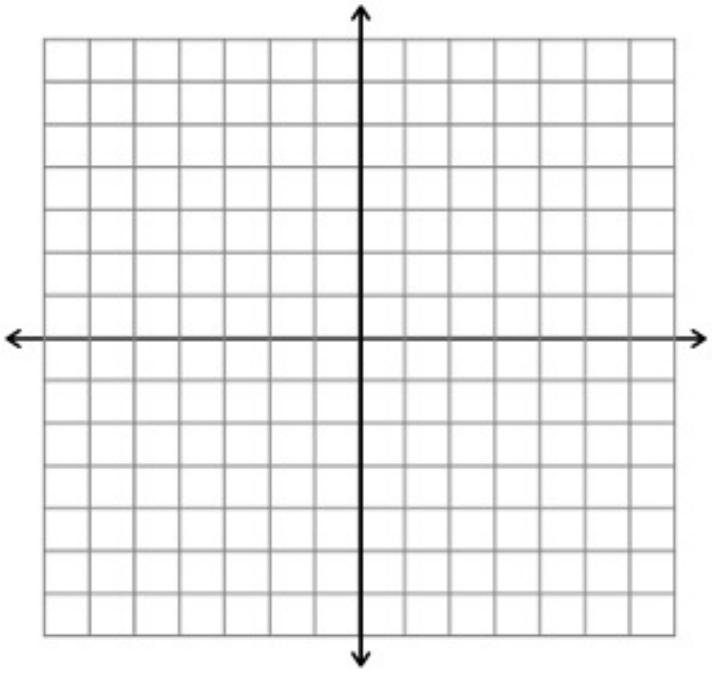
Its domain is _____.

Its range is _____.

Its average rate of change on the interval $[-3, -2]$ is _____.

Its average rate of change on the interval $[100, 1000]$ is _____.

Graph the function below:



When you encounter a new function, these are questions you can ask to get a better understanding of that new function.

Problem 4: Function Detective

For each of the sets of criteria below, see if you can find a function that fulfills the criteria.

1. Slope of -2 and going through the point (0, -1).

2. Undefined slope and going through the point (-3, 2).

3. Going through the points (2, 3) and (4, 5).

Asking yourself what you know and what your answer should look like is an important technique.