

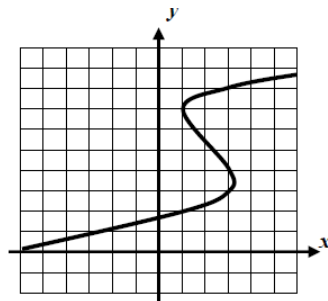
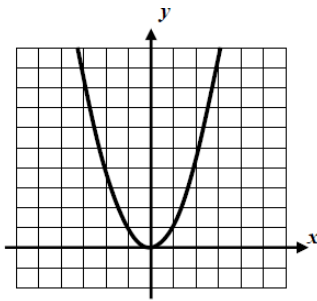
Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Class: \_\_\_\_\_

Algebra  
 Unit 4  
 HW 4-1

1) Is this relation a function?

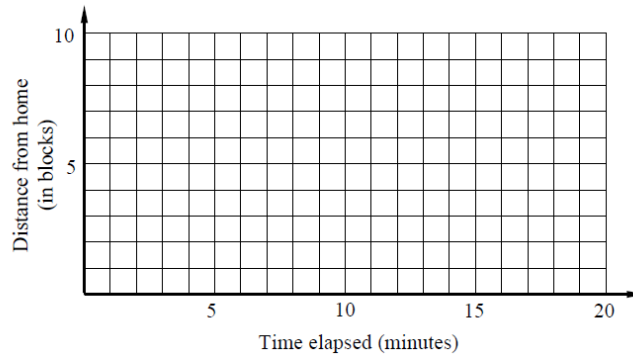
Input $x$	Calculation	Output $y$
-2	None	4
3	None	3
3	None	2

2) Do either of these graphs represent functions?



3) Given the following scenario, graph a function that would map Liza's distance away from her house according to the time elapsed.

Liza has a few items she needs to pick up from a grocery store 8 blocks away. Liza travels at a constant rate of 2 blocks per minute when not stopped at a light. On her way to the grocery store she doesn't hit any red lights and the trip takes her 4 minutes. She spends 8 minutes in the grocery store and then starts to head home. When she's halfway home she hits a red light that lasts 3 minutes. After the light ends, she then drives the second half of the way home.

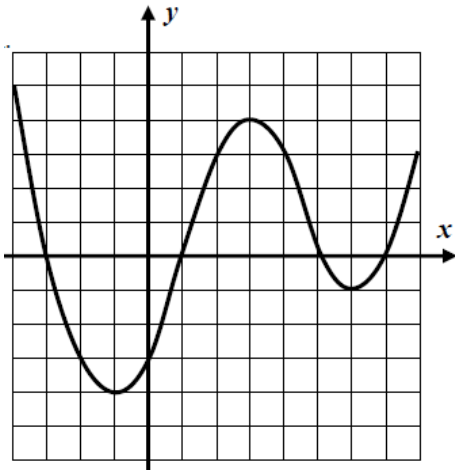


4) Find  $f(-2)$  using the function  $f(x) = \frac{6-x}{5}$

5) Find  $g(6)$  using the function  $g(x) = x^2 - 5x + 7$

6) If  $f(x) = \frac{6x^2}{2x}$  and  $h(x) = 10x - 7$  is the following statement true –  $h(2) < f(2)$

7)



a) Using the graph what would the value of  $f(1)$  be?

b) Using the graph what values could be solve  $f(x) = -4$ ?

c) Using the graph, what values could solve  $f(x) = 0$

8) Physics students drop a ball from the top of a 100 foot high building and model its height above the ground as a function of time with the equation  $h(t) = 100 - 16t^2$ . The height,  $h$ , is measures in feet and time,  $t$ , is measured in seconds. Be careful with all calculations in this problems and remember to do the exponent (squaring) first.

- (a) Find the value of  $h(0)$ . Include proper units. What does this output represent? Reread the problem if necessary.
- (b) Calculate  $h(2)$ . Does our equation predict that the ball has hit the ground at 2 seconds? Explain.