

Name: _____
Date: _____
Class: _____

Algebra
Unit 4
PS

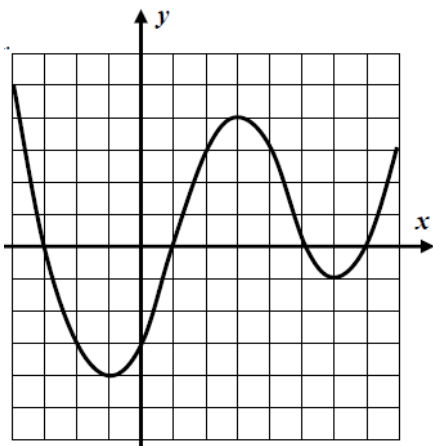
1) [2] Explain if the following relation could be a function?

x	-7	8	2	-8	3
y	6	-1	8	-2	6

2) [3] Draw a graph that would represent the following situation (with time on the x and distance away from home on the y). Jim walks to park every day. When walking, he moves at a constant rate of 3 blocks per minute. On the way to the park he doesn't have to stop at all and it takes him 4 minutes. He is at the park sitting on a bench for 8 minutes and then gets a call that he needs to return home. On the way home he walks for 2 minutes (at the same constant rate that he moved at on his way) before waiting 2 minutes at a crosswalk. He then walks another minute before waiting 3 minutes at the next crosswalk. Finally, he finishes walking home without stopping again.

3) [3] Find $g(-3)$ using the following function: $g(x) = \frac{6-x^2}{2x} - 7$

The following graph represents $y = h(x)$. Use the graph for #4 through #6



4) [2] What is the absolute minimum for this $h(x)$?

5) [2] What is the range for $h(x)$?

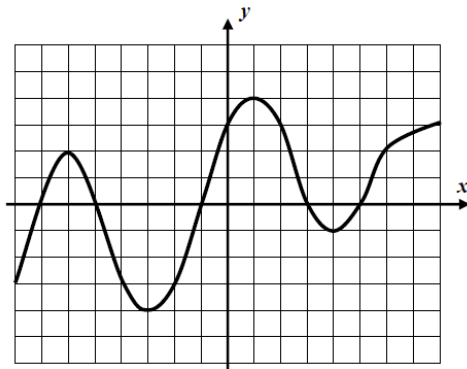
6) [2] For which x would $h(x) = 4$

7) [4] If $g(x) = 200 - 2x^2$ can be used to show the height of a ball above the ground after x seconds, sketch a graph for this function and use the graph to show how long the ball is in the air.

8) [4] A piecewise function is represented by $q(x) = 4 - 5x$ for $x < 1$ and $2x - 4$ for $x \geq 1$. Draw a graph of this function using the domain $-2 \leq x \leq 3$. Using this graph what is the range of this function?

9) [2] Using the $q(x)$ from #8, what would $q(1)$ be equal to?

10) [2]



What would the local maximums be for this function?

11) [2] State two intervals on which the function in #10 is increasing.

12) [4] Sketch a function $(h(x))$ that has the following characteristics:

Passes through the points $(-6, 2)$, $(-2, -1)$ and $(5, 3)$

Has an absolute maximum at $h(-4) = 5$

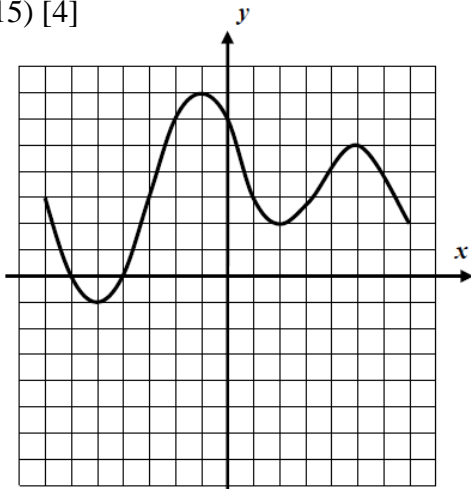
Has an absolute minimum at $h(2) = -3$

Has a domain of $-8 \leq x \leq 7$

13) [2] Is the point $(-2, -13)$ on the graph of the function $d(x) = 5 - 7x - x^2$?

14) [3] Graph the following function on the interval $2 \leq x \leq 7$ $u(x) = (x - 5)^2 + 2$

15) [4]



Which interval would have the largest average rate of change?

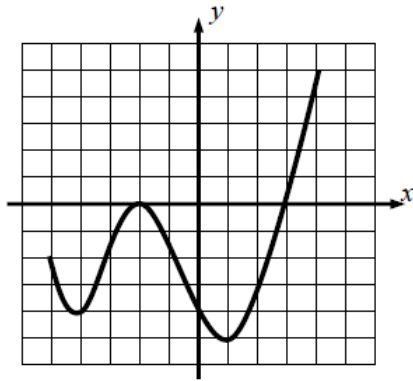
a) $x = -7$ to $x = -4$

b) $x = -2$ to $x = 0$

c) $x = 2$ to $x = 5$

16) [3] Find the average rate of change between $x = -6$ and $x = -1$ using the following function: $t(y) = \frac{2x^2 - 4x}{6}$

17) [3] What is the domain and range for the following function graphed below?



18) [3] Graph the following piecewise function $f(x) = \begin{cases} 2-3x & -1 \leq x \leq 1 \\ x-2 & 1 < x \leq 3 \end{cases}$