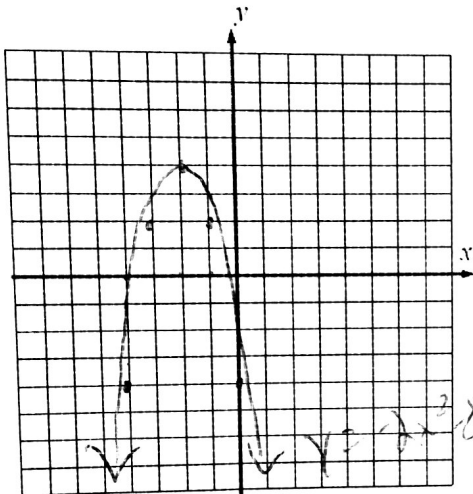


Name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Class: \_\_\_\_\_

Algebra  
 Unit 8  
 HW 8-6

1) Graph:  $y = -2x^2 - 8x - 4$



x	y
-4	-4
-3	2
-2	4
-1	2
0	-4

2) How would the graph of  $y = 2x^2 + 8x + 4$  look compared to the graph of #1? What would be different and how do you know?

It would open up b/c the coefficient on the  $x^2$  is positive

3) What would the axis of symmetry be for:  $y = -x^2 + 6x + 1$

$$x = \frac{-b}{2a} = \frac{-6}{2(-1)} = \frac{-6}{-2}$$

$$\boxed{x = 3}$$

4) Over what range is the following function positive?  $f(x) = -2x^2 + 12x + 14$

x	y
-1	0
0	14
1	24
2	30

x	y
3	32
4	30
5	24
6	14
7	0

$$0 < x < 7$$

5) What is the maximum value that  $y = -x^2 - 10x - 18$  obtains?

x	y
-7	3
-6	6
-5	7
-4	6
-3	3

Max

max y value is 7  
 max pt is (-5, 7)

6)  $C(n) = \frac{1}{500}n^2 - n + 200$  models the cost of computers based on the number manufactured. Is there a maximum cost or minimum cost? Are there any zeroes for this function?

\* no zeroes, it is always above the x-axis  
 \* has a minimum b/c it opens up (vertex)

use axis of symmetry

$$x = \frac{-b}{2a} = \frac{-(-1)}{2(\frac{1}{500})} \rightarrow x = \frac{1}{\frac{2}{500}} \rightarrow x = 250$$

$$C(250) = \frac{1}{500}(250)^2 - 250 + 200$$

$$C(250) = 75$$

Min cost is 75

7) Find the zeroes of this  $2x^2 + 5x - 12 = 0$  by graphing or by factoring.

x	y
-4	0

$$2x^2 + 5x - 12 = 0$$

$$x^2 + 5x - 24 = 0$$

$$(x+4)(x-3) = 0$$

$$(x+4)(2x-3) = 0$$

$\checkmark x = -4$      $x = \frac{3}{2}$   
★

\* no 2nd pt / need to factor

8) What are the zeroes of  $y = 3x^2 - 6x - 24$ ? What would it be in factored form?

$$GCF = 3 \quad \frac{3}{3} \quad \frac{-6}{3} \quad \frac{-24}{3}$$

$$0 = 3(x^2 - 2x - 8)$$

$$0 = 3(x-4)(x+2)$$

$$x-4=0 \quad x+2=0$$

$$x=4$$

$$x=-2$$