Algebra 1 | Unit 8: Quadratic Functions | Key 2/10/2020 Practice

Day 12 – Comparing Quadratic Functions Practice Assignment

Name: _____

Date: _____ **Block:** _____

Directions: Answer the following questions to comparing quadratic functions.

1. Which quadratic function has the bigger y-intercept? Explain why.

a. $y = -x^2 + 3x + 8$

c=8

(0,8)

b.

x	-4	-3	-2	-1	0	1
y	9	13	19	13	9	7

(0,9)

B is bigger

2. Which quadratic function has the smallest y-intercept? Explain why.

a. $y = x^2 + 4x - 12$

C: (0,-12)

↓

Smallest

b. $y = (x + 3)(x - 3)$

$x^2 - 3x + 3x - 9$

$x^2 - 9$

C: (0,-9)

c. $y = (x + 2)^2 - 13$

$(x+2)(x+2) - 13$

$x^2 + 4x + 4 - 13$

$x^2 + 4x - 9$

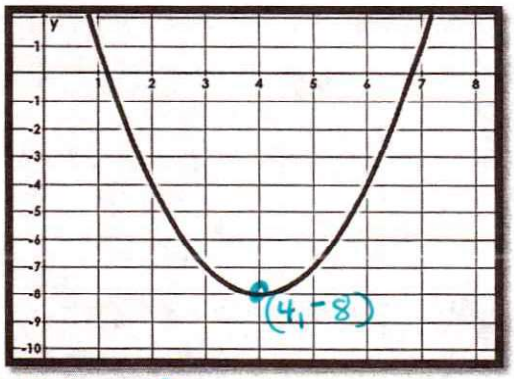
C: (0,-9)

3. Which quadratic function has the least minimum value? Explain why.

a. *look for vertex*

x	-4	-3	-2	-1	0	1
y	0	-5	-8	-9	-8	-5

b.



V: (-1,-9)

smallest → y=-9

V: (4,-8)

y=-8

-9 < -8

4. Which quadratic function has the greatest minimum value? Explain why.

a. $y = (x + 4)^2 + 2$

V: (-4,2)

y=2

↑

biggest

b. $y = -(x + 3)(x + 1)$

a = pos

a=neg ~~X~~

$-(x^2 + x + 3x + 3)$

has max $-(x^2 + 4x + 3)$

$-x^2 - 4x - 3$

$x = \frac{4}{2(-1)} \rightarrow -2$

$-(-2+3)(-2+1) \rightarrow 1$

V: (-2,1)

y=1

c.

x	2	3	4	5	6
y	0	-1	0	3	8

V: (3,-1)

y=-1