Advanced Algebra

Unit 4: Quadratics

Homework Week #1

Please start to read in your Green book 360 through 389

Everybody should be able to do all problems involving Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Monday 12/3/2018 : "I can move between the forms of a quadratic". Fill in the missing forms:

General Form	Factored Form	Vertex Form
$x^2+14x+45$		
	8(x-3)(x+6)	
		(x-2)²-4

For the following problems, factor and use the mid- point method to find the x intercepts, vertex and y intercept. Make a sketch of each graph:

1)y= x^2 + 14x + 40

2)f(x)= x^2 – 4x – 32

3)f(x)= x^2 + 10x + 24

Tuesday 12/4/2018: " I can move between the forms of a quadratic" Fill in the missing forms:

General Form	Factored Form	Vertex Form
$6x^2+14x+8$		
		$3(x-2)^2-5$
	$4(x-10)(x+4)$	

Solve by using the quadratic formula $y=3x^2-5x+1$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

The x values or the roots or answers are: _____ and _____

Review from Unit 2:

Sketch the following parabolas. Remembering your shifts that we talked about in Unit 2 and that the parent graph of $y=x^2$ is a parabola though (0,00 with a 1-1 relationship.

a) $f(x)=2(x-3)^2+5$
b) $y=(x-2)^2$
c) $f(x)=2x^2+5$
d) $y=3x^2$

e) $y=-(x+4)^2$

f) $y=x^2+4$

Wednesday 12/05/2018" I can find the x intercepts, vertex, and y intercept. I can do this by finding the roots. Once I find the roots, I can add the roots together and divide by 2. This will give me the x coordinate of the vertex or the middle of the parabola. Then I can do VARS(middle) to get the corresponding y value.

General Form	Roots	Vertex	Y intercept	Vertex Form
$x^2+14x+40$				
$x^2-4x-32$				
$x^2+10x+24$				

Thursday 12/06/2018 " I can write the equation of a parabola"

1) A parabola touches the x axis at 3 and passes through the point (-2,25). Write the equation in both vertex and standard form:

Vertex form_____

General form_____

2) A parabola cuts the y axis at -240 and has roots at 6 and -10

3) A parabola has roots at 6 and -12 and passes through the point (7,95)

4) A parabola has a x coordinate of the vertex at 3. One of the roots is 10. It passes through the point (9,-26)