Name_____

Date_____

Unit 4: Quadratics

Classwork Assignment #12

I can find the Key points of a parabola:

Find all the key points for the following quadratics:

1) $y= 2x^2-4x-9$

Root 1	Root 2	Vertex	Y intercept

2) $y=16x^2-20x-8$

Root 1	Root 2	Vertex

I can find the vertex. If I can find the vertex, I can write a quadratic in vertex form. We know from Unit 2 that a function in vertex form is $f(x) = a(x-h)+k$ where h and k are the vertex. We are talking only about quadratics in this unit so we know that vertex form will be $y=a(x-h)^2+k$. I need a strategy to find the vertex. Everybody can find the roots, add them and divide by 2.
Put the following into vertex form

3) $y=4(x-2)(x+8)$
4) $y=x^2+20x-16$
5) $y=x^2+19x-4$

I can multiply quadratics out quickly...

Multiply the following out into General form. We all have the strategy, we COULD make a box and multiply it out. Some of us can really start looking for patterns and seeing how straight forward this task is.

6) $y=2(x-8)^2+16$
7) $y=(x-5)(x+10)$
8) $y= (2x-4)(3x+6)$
9) $y=8(3x-5)(2x+5)$
10) $y=12(x-2)^2+28$
11) $y=(4x-2)(4)(x-2)$
12) $y=6x-5)(10)(x-5)$
13) $y=8(x-5)(x)$

I can factor: Factor the following

14) $8x^2-16x$

15) $120x^2-18$

16) $256x^2-16x$

17) $200x^2-50x$

Assignment #12

① $y = 2x^2 - 4x - 9$

$$\frac{4 \pm \sqrt{16 - 4(2)(-9)}}{4}$$

$$\frac{4 \pm 9.3}{4}$$

3.325

-1.325

② $y = 16x^2 - 20x - 8$

$$y = \frac{20 \pm \sqrt{20^2 - 4(16)(-8)}}{32}$$

$$\frac{20 \pm 30.2}{32}$$

1.56875

-.3125

③ $y = 4(x-2)(x+8)$

$2, -8$ $\boxed{(-3, -100)}$

④ $y = x^2 + 20x - 16$

$y = (x^2 + 20x + 100) - 116$

$\boxed{(x+10)^2 - 116}$

⑤ $y = x^2 + 19x - 4$

$y = (x^2 + 19x + \underline{90.25}) - \underline{90.25} - 4$

$\boxed{(x+9.5)^2 - 94.25}$

I can Multiply

⑥ $2(x^2 - 16x + 64)$

$2x^2 - 32x + 128 + 16$

$\boxed{2x^2 - 32x + 144}$

⑦ $\boxed{x^2 + 5x - 50}$

⑧ $(2x-4)(3x+6)$

$6x^2 + 12x - 12x - 24$

$\boxed{6x^2 - 24}$

⑨ $y = 8(3x-5)(2x+5)$

$8(6x^2 + 15x - 10x - 25)$

$8(6x^2 + 5x - 25)$

$\boxed{48x^2 + 40x - 200}$

(10) $y = 12(x-2)^2 + 28$

$12(x^2 - 4x + 4)$

$12x^2 - 48x + 48 + 28$

$\boxed{12x^2 - 48x + 76}$

(11) $(4x-2)(4)(x-2)$

$4x^2 - 8x - 2x + 4$

$4(4x^2 - 10x + 4)$

$\boxed{16x^2 - 40x + 16}$

(12) $(6x-5)(10)(x-5)$

$6x^2 - 30x - 5x + 25$

$10(6x^2 - 35x + 25)$

$\boxed{60x^2 - 350x + 250}$

(13) $y = 8(x-5)(x)$

$8(x^2 - 5x)$

$\boxed{8x^2 - 40x}$

(14) $8x^2 - 16x$

$\boxed{8x(x-2)}$

(15) $120x^2 - 18$

(16)

(17) $200x^2 - 50x$