Assignment 2
Unit 2

Name:_____

1 Find the vertex and x-intercept(s) of the following quadratic functions.

A) $y = x^2 - 2x - 8$ B) $y = x^2 - 4x - 12$

2 Solve the following equations by removing the GCF.

A) $6x^2 - 36x = 0$ B) $420x^2 = 900x$

3. Solve the following equations by factoring. (Use a Difference of 2 squares.)

$a^2 - b^2 = (a - b)(a + b)$

A) $9x^2 - 25 = 0$ B) $16 - x^2 = 0$

C) $25x^2 = 81$ D) $49x^2 = 100$

4. Find the roots to the quadratic equation below by factoring. Remember, you need to find two numbers to give "c" and add to give "b".

A) $x^2 - 15x + 26 = 0$ B) $2x^2 - 14x = 16$

C) $x^2 - 6x = -72$ D) $x^2 - 13x + 36 = 0$

5. Use the process of decomposition (rectangle method) to find the zeros of the following functions.

A) $2x^2 + 17x + 15 = 0$

B) $4x^2 + 13x + 10 = 0$

C) $5x^2 - 8x - 4 = 0$

D) $4x^2 - 37x + 9 = 0$

6. Remember the process is 1) remove the GCF first if applicable then 2) look for a difference of squares or 3) look for a trinomial. "Find the roots" means to solve for x.

A) $x^2 - 15x + 26 = 0$

B) $9x^2 - 25 = 0$

C) $18x^2 - 72 = 0$

D) $6x^2 = 36x$

E) $0 = 420x^2 - 900x$

G) $2x^2 - 14x = 16$

H) $0 = -s^2 + 6s - 72$

7. Use the process of factoring to find the x-intercepts to the graph of each function below. Be sure to set y = 0 first.

A) $y = 6x^2 - 36x$ B) $y = 9x^2 - 18x - 27$ C) $y = 9x^2 + 45x$

D) $y = 400 - 100x^2$ E) $y = 81x^2 - 9$

F) $2x^2 + 17x = -15$ G) $10x^2 = 29x - 10$

8. Use the quadratic formula to find the roots of the quadratic equations below. If the answers are decimals, round them to 2 decimal places.

A) $2x^2 - 6x + 3 = 0$ B) 0 $4x^2 - x - 3 = 0$

C) $6x^2 - x - 6 = 0$

D) $2x^2 + 31x + 92 = 0$

Use the following formulas to answer the questions below.

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

9. A rocket is fired into the air and its path can be described by the function $y = -4t^2 + 32t + 10$ where ***t*** is the time is seconds and ***h*** is the height in metres.

A) When did the rocket reach maximum height? What is the rockets maximum height? This is a max/min problem which mean you have to find the vertex.

B) How long was the rocket in the air? Set the quadratic function equal to 0 and find the roots.

C) When was the rocket 50 m above the ground? (Set y = 50. Rearrange the equation so that it equals = 0 and then solve the equation.)

10. An object is fired into the air from the top of a tower according to the equation $h = -15t2 + 70\ t + 200$ where t is the time in seconds and h is the height in metres.

A) When will the object reach its maximum height? What is the object's maximum height?

B) How long was the object in the air?

C) When was the object at a height of 250 m?