**9.4 – 9.5 Factoring Quadratic Equations**

Study Guide Questions

**9.4: Factor Using the GCF –**

**You should be able to:**

**1.** Identify the GCF of a quadratic expression and factor using this method.

**Ex: ** becomes  when factored. The circled portion would be your answer.

**Factor using the GCF:**

**Ex:  Ex: **

**2.** Solve a quadratic equation in factored form.

**Ex: ,** since you are multiplying two quantities and the answer is 0, then one of the two quantities being multiplied must be equal to zero. This means either 3*x* – 1 = 0 or *x* + 2 = 0

If: 3*x* – 1 = 0 you would: If: *x* + 2 = 0 you would:

 +1 +1 first add 1 to both sides *x* + 2 = 0

 3*x* = 1 –2 –2 subtract 2 so:

 3 3 then divide by three so: *x* = – 2

  *x* = 

 **Solve:**

 **Ex: ** = 0 **Ex: **= 0

**3.** Solve a quadratic equation by factoring using the GCF first!

**Ex: **

 **** Factor using GCF of 7*x*

 So either 7*x* = 0 or *x* + 3 = 0

  or 

**Solve:**

**Ex:  Ex: **

**4.** Use the vertical motion model to solve problems involving a problem’s height and time. (

**Ex:** An object is launched from the ground with an initial vertical velocity of 32 feet per second. How long before the object reaches the ground?

**9.5: Factor Quadratics in the Form *x*² + *bx* + *c*:**

**You should be able to:**

**1.** Factor trinomials in the form *x*² + *bx* + c by factoring into two binomials in the form:

(*x* + *p*)(*x* + *q*)

 \*To find *p* and *q* you find the factors of *c* that add up to *b*.

**Ex: ** becomes  when factored because –4 and –3 first multiply to get +12, but also add up to –7.

**Factor:**

**Ex.  Ex:  Ex:** 3*x*² + 9*x* + 6

**2.** Solve quadratic equations by factoring first.

**Ex: =** 0Factor first

= 0 Solve

  or 

**Ex:  Ex: **

**3.** Use the vertical motion model to solve problems involving a problem’s height and time. (

**Ex:** An object is launched from a height of 48 feet with an initial vertical velocity of 32 feet per second. How long before the object reaches the ground?

**4.** Find the missing dimension of a rectangle given the area by factoring.



**Ex:**