**Factoring and Solving Quadratic Functions Review (ax2+bx+c) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* **Before you can factor a quadratic equation it must be equal to \_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ **Easiest factoring, a = 1**
	+ **If a**$\ne 1, $$\ne $ **1look for a \_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ **If no GCF exists, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXAMPLE 1:** Factor and solve x2 – 12x = -32 🡪 Rewrite: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Factor = (\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_ )

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

Set each factor equal to 0 and solve.

x = \_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_

**EXAMPLE 2:** Factor and solve $x^{2}+10x+24$ = 0

Factor = (\_\_\_\_\_\_\_ )(\_\_\_\_\_\_\_\_ )

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

Set each factor equal to 0 and solve.

x = \_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

**EXAMPLE 3:** Factor and solve 3x2+ 36x = 39 🡪 Rewrite: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

There’s a GCF of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )

Factor = \_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_ )(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )

Set each factor equal to 0 and solve.

x = \_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_

**EXAMPLE 4:** Factor and solve $4x^{2}+13x+9$ = 0

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

Is there a GCF? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

( \_\_\_\_\_\_\_\_\_\_\_\_\_ )(\_\_\_\_\_\_\_\_\_\_\_\_\_ )

(\_\_\_\_\_\_\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_\_\_\_\_\_ )

Factor = ( \_\_\_\_\_\_\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )

**EXAMPLE 5:** Factor and solve $6x^{2}-8x-8$ = 0

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

Is there a GCF? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )

Now use slide and divide

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_(\_\_\_\_\_\_\_\_\_\_\_\_\_ )(\_\_\_\_\_\_\_\_\_\_\_\_\_ )

\_\_\_\_\_\_\_\_\_(\_\_\_\_\_\_\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_\_\_\_\_\_ )

Factor =

\_\_\_\_\_\_\_\_( \_\_\_\_\_\_\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )

**EXAMPLE 6:** Factor and solve $2x^{2}-6x-2$ = 0

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

Is there a GCF? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )

Now we can use the Factor Triangle

Can you think of any factors that would multiply together to get \_\_\_\_\_\_\_\_ and add to get \_\_\_\_\_\_\_\_\_?

\_\_\_\_\_\_\_\_\_, that’s because none exists. This means that this quadratic equation is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

What does this tell us about the solutions for this quadratic?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**EXAMPLE 7:** Factor and solve 6x2-5x-4 = 0

**\_\_\_\_**

**+**

**=**

**\_\_\_\_**

Is there a GCF? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

( \_\_\_\_\_\_\_\_\_\_\_\_\_ )(\_\_\_\_\_\_\_\_\_\_\_\_\_ )

(\_\_\_\_\_\_\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_\_\_\_\_\_ )

Factor = ( \_\_\_\_\_\_\_\_\_\_\_\_\_ )( \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ )