**How to Factor Quadratic Trinomials (a=1)**

Basic Quadratic Expression

A basic quadratic expression has three terms.

**a is the coefficient for x2**

**b is the coefficient for x**

**c is a constant**

$$ax^{2}+bx+c$$

When $a\ne 1$

If $a\ne 1$ we usually need to find a new strategy.

LOOK FOR A COMMON FACTOR, a number which goes into the a, b and c terms. This will show you that your quadratic has 3 factors.

$$2x^{2}-6x-20$$

Here all three terms are divisible by 2 (even), factor out a 2 and continue steps above.

$2(x^{2}-3x-10$)

$$2\left(x+2\right)(x-5)$$

$$x^{2}-3x-10$$

$$a=1 b= -3 c= -10$$

$$-10$$

$$1\* -10 2\*-5$$

$$-1\*10 -2\*5$$

$$\left(x+2\right)(x-5)$$

**Factoring Quadratic Trinomials**

**Factoring:** a number or quantity that when multiplied with another produces a given number or expression.

Here we will be finding the **two binomials** which multiply to make a **quadratic trinomial**.

**Process**

1. **Define your a, b and c terms. This method only works when a = 1**
2. List the factors of the **c** term
3. **Choose the set of factors that add up to the b term. Here 2 and -5 add up to -3.**
4. **Rewrite these factors inside of parentheses along with the variable from the question.**

$$\left(x-5\right)\left(x+2\right)$$

Distributing all terms (FOIL)

$$x^{2}+2x-5x-10$$

$$x^{2}-3x-10$$

**Quadratic trinomials** are typically created by multiplying **two binomials**.

Distributing means multiplying all terms. Since there are 4 terms, you should have **4 answers**. We use the acronym FOIL (First, Outer, Inner, Last) to make sure we multiply all terms.