# Factoring Polynomials

## 🔴 Greatest Common Factor (GCF)

### When given only variables with exponents......

1. Choose the variable with the *SMALLEST EXPONENT*.

### When given a COEFFICIENT and a VARIABLE with EXPONENTS......

1. Find the *GCF* of the *COEFFICIENTS*.

2. Choose the *VARIABLE with the SMALLEST EXPONENT*.

### When given a POLYNOMIAL......

1. Find the *GCF* (for the coefficients and the variables).

2. Write each term *as a FRACTION*.

3. *DIVIDE* each term *by the GCF*.

4. Write your *answer in PARENTHESES*.

5. Write the *GCF in FRONT of the PARENTHESES*.

⭐ Remember......
If terms *DOES NOT have a VARIABLE*, you *CANNOT have a VARIABLE in your GCF*. ⭐

# <u>Difference of Two Squares (D.O.T.S.)</u>

First, *decide if you can use DOTS* by looking for a **_BINOMAL_** that has……

- ➢ *SUBTRACTION* in the *MIDDLE.*
- ➢ A variable with an *EVEN EXPONENT*.
- ➢ A number that is a *SQUARE ROOT*

## <u>Factoring Using  D.O.T.S</u>

*<u>Step 1:</u>* Set up *<u>PARENTHESES</u>* like this ➡ **(   +   )(   -   )**

*<u>Step 2</u>*:  Put the *<u>VARIABLE in each PARENTHESES</u>*

*<u>Step 3</u>*:  *<u>DIVIDE the EXPONENT by 2</u>* and put it *<u>on your VARIABLES</u>* in the parentheses.

*<u>Step 4</u>*:  Find the *<u>SQUARE ROOT of the number</u>*.

*<u>Step 5</u>*:  Put the *<u>SQUARE ROOT in each PARENTHESES</u>*.