



**Example 5)** Factor x2- 10x - 24

1. Write down two pairs of parentheses.

2. Determine the factors of C.

3. Find the combination of factors that will add/subtract to equal B.

4. Place the values into the parentheses

5. Check your answer using FOIL or box Method.

**Slide and Divide Method for Factoring Polynomials**

The "slide and divide" method is a way to [factor second degree poynomials](http://mrsgalgebra.pbworks.com/Factoring-Second-Degree-Polynomials) of the form ax2 + bx + c, and is designed for the "hard" case, when the *a* value of the second degree [polynomial](http://mrsgalgebra.pbworks.com/Polynomials) is not 1.

This method will be illustrated by using an example.  Suppose we want to factor 3x2 + x - 10.

1)  "Slide" the *a* value (3) to the end by multiplying it by *c* (-10).  We get:  x2 + x - 30.

2)  We have created the "easy" version, where a = 1.  [Factor](http://mrsgalgebra.pbworks.com/Factoring-Second-Degree-Polynomials)using reverse [FOIL](http://mrsgalgebra.pbworks.com/FOIL) (or your favorite method).  We get:

     (x - 5)(x + 6)

3)  Now divide the number parts of these [binomials](http://mrsgalgebra.pbworks.com/Binomials) by the value *a* (3):

     (x + 6/3)(x - 5/3)

4)  Reduce.

     (x + 2)(x - 5/3)

5)  If we still have a fraction in either of the [binomials](http://mrsgalgebra.pbworks.com/Binomials), move the denominator from the bottom of the fraction to the [coefficient](http://mrsgalgebra.pbworks.com/Coefficient-of-a-Monomial) of the variable:

     (x + 2)(3x - 5)

6)  Check by [multiplying back](http://mrsgalgebra.pbworks.com/Multiplying-Polynomials)to see if it matches our original [polynomial](http://mrsgalgebra.pbworks.com/Polynomials):

     (x + 2)(3x - 5) = 3x2 + x - 10

     We have our original [polynomial](http://mrsgalgebra.pbworks.com/Polynomials), so we have found the correct factors.

**Example 6)** 



 Factor the trinomials.







Factor the binomials.