

And we know that the Son of God has come and has given us an understanding, that we may know Him who is true; and we are in Him who is true, in **His Son Jesus Christ**. **This is the true God** and eternal life. 1 John 5:20

## Factoring Trinomials

The following expressions are called trinomials because the expression has three terms. There are two most common trinomials that has the form:

- a)  $x^2 + bx + c$  where b and c are different than zeros  
 b)  $ax^2 + bx + c$  where a is a number different than 1 and 0

$x^2 - 5x - 14$ $(x - 7)(x + 2)$	$x^2 + 9x + 20$ $(x + 5)(x + 4)$
To find the 2 factors (expressions) you must find 2 numbers that the product is -14 and the same 2 numbers the sum will be -5.	To find the 2 factors (expressions) you must find 2 numbers that the product is 20 and the same 2 numbers the sum will be 9.
A very good strategy to use is to find all factors of the 14 and from there which 2 of them have as difference of -5.	A very good strategy to use is to find all factors of 20 and from there which 2 of them have the sum of 9.
How do I know the signs of the numbers? 1. When the sign of the <b><u>last term is negative</u></b> that means that one of the factors is negative and one is positive 1.1 If the second sign is negative means that the greatest factor is negative. 1.2 If the second sign is positive means that the greatest factor is positive.	How do I know the signs of the numbers? 2. When the sign of the <b><u>last term is positive</u></b> that means that either is negative, or both are positive. 2.1 If the second sign is negative means both are negative. 2.2 If the second sign is positive means that both are positive.

The sign law also works in  $ax^2 + bx + c$  the only difference is that to find the factors you have more numbers of combinations to try.

Examples then try by yourself.

$6x^2 - 9x - 15$	$4x^2 + 6x + 2$	$5x^2 + 3x - 14$
$(2x - 5)(3x + 3)$	$(2x + 1)(2x + 2)$	$(5x - 7)(x + 2)$

$$6x^2 + 3x - 3$$

$$12x^2 + 26x + 10$$

$$4x^2 + 19x - 5$$

He who believes in the Son has everlasting life; and he who does not believe the Son shall not see life, but the wrath of God abides on him." John 3:36