Sign Rules for Factoring Trinomials

$$ax^2 + bx + c$$
$$(\quad)(\quad)$$

To determine the signs which go in the parentheses:

1. Look at the sign of the **last term** in the trinomial.

If it is positive:

The signs will be alike $(\ +\ )(\ +\ )$ or $(\ -\ )(\ -\ )$
Use the case that matches the middle term.
Example: $x^2 - 6x + 9 \quad use\ (\ -\ )(\ -\ )$

Example: $x^2 + 6x + 9 \quad use\ (\ +\ )(\ +\ )$

If it is negative:

The signs will be different $(\ +\ )(\ -\ )$
Example: $x^2 - 3x - 4 \quad use\ (\ +\ )(\ -\ )$

Example: $x^2 + 3x - 4 \quad use\ (\ +\ )(\ -\ )$

***Problems*:**

1 $x^2 + 6x - 7$
2 $x^2 - 8x - 9$
3 $x^2 + 8x + 16$
4 $x^2 + 5x + 4$
5 $x^2 - 4x - 5$
6 $x^2 + 10x - 11$
7 $x^2 - x - 12$
8 $x^2 - 3x + 4$

Solutions :

1. $(\ +\ )(\ -\ )$
2. $(\ +\ )(\ -\ )$
3. $(\ +\ )(\ +\ )$
4. $(\ +\ )(\ +\ )$
5. $(\ +\ )(\ -\ )$
6. $(\ +\ )(\ -\ )$
7. $(\ +\ )(\ -\ )$
8. $(\ -\ )(\ -\ )$