

Expanding and Factoring are opposite operations.

Examples

Expand $(x + 5)(x + 2)$

Factor $x^2 + 7x + 10$

Expand $(x + 4)(x + 1)$

Expand $(x + 3)(x + 4)$

When Factoring Trinomials, we need to find...

$$x^2 + bx + c$$

Example 1: Factor each trinomial.

a) $x^2 + 7x + 12$

$$\begin{array}{r} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

b) $x^2 + 6x + 8$

$$\begin{array}{r} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

c) $x^2 + 3x - 4$

$$\begin{array}{r} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

d) $x^2 - 3x - 18$

$$\begin{array}{r} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

Example 2: Find an expression for the rectangle's area by factoring.

$$A = x^2 + 3x - 28$$

$$\begin{array}{r} \underline{\quad} x \underline{\quad} = \\ \underline{\quad} + \underline{\quad} = \end{array}$$

Example 3: Factor the following. (**Hint:** You will need to common factor first and then trinomial factor second.)

a) $5x^2 + 35x + 30$

b) $-2x^2 + 4x - 2$

Homework: pg. 309 #2, 3, 5, 7, 13, 16