

Do Now: Multiply the following binomials by using the tabular method:

a) $(3x + 2)(5x - 1)$

b) $(x - 5)(x + 5)$

Discovery: Analyze the products of the three different conjugate pairs. Then answer the following questions:

$$\begin{array}{l} (x + 3)(x - 3) \\ x^2 + 3x - 3x - 9 \\ x^2 - 9 \end{array}$$

$$\begin{array}{l} (x - 2)(x + 2) \\ x^2 - 2x + 2x - 4 \\ x^2 - 4 \end{array}$$

$$\begin{array}{l} (4x + 1)(4x - 1) \\ 16x^2 - 4x + 4x - 1 \\ 16x^2 - 1 \end{array}$$

- c. Are your final answers trinomials or binomials?
- d. What patterns do you notice when you multiply conjugate pairs together?

Aim: Multiplying Conjugates

The _____ is where we **change the sign in the middle of two terms**.

- It is only used in expressions with **two terms** (called "_____"). These two terms have to be **identical** in both parentheses.
- Examples:

For each given binomial expression, state its conjugate:

a) $x^2 - 3$, _____

b) $3 + x$, _____

c) $a - b^3$, _____

Rule: When multiplying conjugates, we do not have to use the tabular method. We can take a shortcut and just multiply the 1st and last terms.

$$(a - b)(a + b) = \underline{\hspace{2cm}}$$

1. Determine the following products:

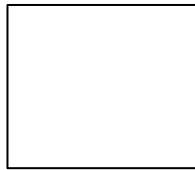
a) $(x + 7)(x - 7)$

b) $(3x + 2)(3x - 1)$

c) $(x + 5)(x + 5)$

2. A square has a side length of x and a rectangle has a length represented by $x - 2$ and a width represented by $x + 2$.

a) Use the information above to illustrate the problem:



b) Determine the area of both the square and the rectangle.

c) How much larger is the area of the square compared to the area of the rectangle?