

**Difference of Squares:**

A difference of squares is the difference of two perfect square terms

$$a^2 - b^2 =$$

**Perfect Square Trinomial**

The trinomial that results from squaring a binomial is called a perfect square trinomial. Notice the first and last terms are perfect squares, and the middle term is twice the product of the square roots of the first and last terms.

$$a^2 + 2ab + b^2 =$$

$$a^2 - 2ab + b^2 =$$

**Example 1:** Expand each of the following

**a)**  $(x - 3)(x + 3)$

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

**c)**  $(4x^2 - 3y)(4x^2 + 3y)$

**d)**  $(x + 4)^2$

**e)**  $(x - 5)^2$

**f)**  $(3x + 2)^2$

**Example 2:** Factor each of the following

**a)**  $x^2 - 36$

**b)**  $x^2 + 14x + 49$

**c)**  $16x^2 - 25$

**d)**  $x^2 - 20x + 100$

**e)**  $4x^2 - 9y^2$

**f)**  $x^2 - 8xy + 16y^2$