Section 7.3b Perfect Square Trinomials

# Objective 1: Factoring Perfect Square Trinomials

A trinomial is a **perfect square trinomial** if it can be written so that its first term is the square of some quantity $a$, its last term is the square of some quantity $b$, and its middle term is twice the product of the quantities $a$ and $b$.

**Perfect square trinomials:**

$$a^{2}+2ab+b^{2}=\left(a+b\right)\left(a+b\right)=\left(a+b\right)^{2}$$

$$a^{2}-2ab+b^{2}=\left(a-b\right)\left(a-b\right)=\left(a-b\right)^{2}$$

Factor the perfect square trinomial.

|  |  |
| --- | --- |
| a. $x^{2}+14x+49$  | b. $4w^{2}-4w+1$ |

|  |  |
| --- | --- |
| c. $16a^{2}-56a+49$  | d. $2x^{2}+20xy+50y^{2}$ |