Squaring Binomials

The greatest difficulty experienced by many students is squaring a binomial containing a radical. That brings us back to the special products learned earlier.

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

Remember, square both the first and last terms, then find the product of the two terms and double.

Examples

$$(\sqrt{5} + 3)^2 = 5 + 2\sqrt{5} \cdot 3 + 9 = 14 + 6\sqrt{5}$$

$$(\sqrt{3} - 7)^2 = 3 - 2\sqrt{3} \cdot 7 + 49 = 52 - 14\sqrt{3}$$

$$(\sqrt{x} + 4)^2 = x + 2\sqrt{x} \cdot 4 + 16 = x + 8\sqrt{x} + 16$$