



Формулы сокращенного умножения

Алгебра 7 класс

Квадрат суммы

$$\left(\triangle + \square \right)^2 = \triangle^2 + 2\triangle \cdot \square + \square^2$$

$$\left(x + y \right)^2 = x^2 + 2xy + y^2$$

$$\left(2x + 3y \right)^2 = (2x)^2 + 2 \cdot 2x \cdot 3y + (3y)^2$$

$$\begin{aligned} (2x + 3y)^2 &= (2x)^2 + 2 \cdot 2x \cdot 3y + (3y)^2 = \\ &= 4x^2 + 12xy + 9y^2 \end{aligned}$$

Квадрат разности

$$\left(\triangle - \square \right)^2 = \triangle^2 - 2\triangle \cdot \square + \square^2$$

$$\left(x - y \right)^2 = x^2 - 2xy + y^2$$

$$\left(2x - 3y \right)^2 = (2x)^2 - 2 \cdot 2x \cdot 3y + (3y)^2$$

$$\begin{aligned} (2x - 3y)^2 &= (2x)^2 - 2 \cdot 2x \cdot 3y + (3y)^2 = \\ &= 4x^2 - 12xy + 9y^2 \end{aligned}$$

Разность квадратов

A diagram illustrating the difference of two squares. It shows two expressions in large parentheses separated by an equals sign. The first expression is a triangle minus a square. The second expression is a triangle plus a square. Blue arcs connect the triangle in the first expression to the triangle in the second, and the square in the first to the square in the second. A green arc connects the minus sign in the first expression to the plus sign in the second.

$$(\triangle - \square) (\triangle + \square) =$$

A diagram showing the expansion of the difference of two squares. It starts with an equals sign followed by a triangle with a red superscript 2, then a plus sign, then a triangle multiplied by a square. This is followed by a minus sign, then a square multiplied by a triangle, and finally a minus sign and a square with a red superscript 2. Two pink diagonal lines cross out the triangle-squared and square-squared terms, leaving the middle two terms.

$$= \triangle^2 + \triangle \cdot \square - \square \cdot \triangle - \square^2$$

Разность квадратов

$$\left| \triangle - \square \right| \left| \triangle + \square \right| = \triangle^2 - \square^2$$

$$\left| x + y \right| \left| x - y \right| = x^2 - y^2$$

$$\left| 2x + 3y \right| \left| 2x - 3y \right| = (2x)^2 - (3y)^2$$

$$\begin{aligned} (2x + 3y)(2x - 3y) &= (2x)^2 - (3y)^2 = \\ &= 4x^2 - 9y^2 \end{aligned}$$