



Exponents

Adding and subtracting can only be done with exactly the same things.

$$\underline{3x^2} + \underline{5x} + \underline{8x^2} - \underline{2x} + \underline{y} = 11x^2 + 3x + y$$

$$\underline{-2xy^2} - \underline{7x^2y} + \underline{25xy^2} + \underline{3xy} - \underline{10x^2y} = 23xy^2 - 17x^2y + 3xy$$

$$9(x+5)^5 + 3(x+5)^5 = 12(x+5)^5$$

$$\begin{aligned}(x^2)^3 &= x^2 \cdot x^2 \cdot x^2 \\ &= x^6\end{aligned}$$

General rule:

$$(x^p)^q = x^{p \cdot q}$$

In opposite direction often used to obtain a quadratic equation:

$$y = 3^{0.2t} + 3^{0.1t} - 4$$

$$y = (3^{0.1t})^2 + 3^{0.1t} - 4$$

$$x^{p \cdot q} = (x^p)^q$$