

Adding Polynomials

When adding polynomials they must be like-terms. When you have like-terms add the coefficients.

Eg. (1) $2x^2 + 3x^2 = 5x^2$
 (2) $-5x^3 + 2x^2 = -5x^3 + 2x^2$
 (3) $3x + 4x^2 + 2x = 4x^2 + 5x$

You cannot add them together because they are NOT like-terms. They have the same base but different exponents.

Set-Up

$$(1) \quad \begin{array}{r} 4x^2 + 3x - 2 \\ + \quad 5x^2 \quad + 3 \\ \hline 9x^2 + 3x + 1 \end{array}$$

$$(2) \quad \begin{array}{r} (3x + 2) + (4x^2 + 1) = \quad \quad \quad 3x + 2 \\ \quad \quad \quad + \quad 4x^2 \quad \quad + 1 \\ \hline \quad \quad \quad 4x^2 + 3x + 3 \end{array}$$

Once you are able to identify the like-terms you can add as follows:

$$(3) \quad \begin{aligned} (14x + 3y) + (-2x + 15y) \\ = 14x + 3y - 2x + 15y \\ = 12x + 18y \end{aligned}$$

$$(4) \quad \begin{aligned} 5y - 6xy + 13x - 1y + 9xy + 7 \\ = 5y - 6xy + 13x - 1y + 9xy + 7 \\ = 13x + 4y + 3xy + 7 \end{aligned}$$

$$(5) \quad \begin{aligned} (74x^2y + 5z) + (-3x^2y + 8z) \\ = 74x^2y + 5z - 3x^2y + 8z \\ = 71x^2y + 13z \end{aligned}$$