



Adding Polynomials

Video Notes

[Video Link](#)

Adding Polynomials

Background Knowledge:

- Like Terms → must have the same variable with the same exponent
- Writing a Polynomial in Standard Form (Descending Order)

Simplify:

$$(4x^2 + 5x - 2) + (3x^2 - 12x + 1)$$

$$\underline{4x^2} + \underline{5x} - \underline{2} + \underline{3x^2} - \underline{12x} + \underline{1}$$

$$\boxed{7x^2 - 7x - 1}$$

Some important notes:

• make sure to write the final answer in standard form (descending order)

• when collecting like terms don't add exponents (we only add exponents when we multiply)

Simplify:

$$(2x^2y + 9xy^2 - 5xy) + (7xy^2 - xy - 11x^2y)$$

$$\underline{2x^2y} + \underline{9xy^2} - \underline{5xy} + \underline{7xy^2} - \underline{xy} - \underline{11x^2y}$$

$$\boxed{-9x^2y + 16xy^2 - 6xy}$$

$\downarrow \quad \quad \downarrow \quad \quad \downarrow$
 $\text{deg}=3 \quad \text{deg}=3 \quad \text{deg}=2$

OR

$$\boxed{16xy^2 - 9x^2y - 6xy}$$

Simplify:

$$(5a - 9a^3 + 3a^2) + (12a^3 - 10a + a^2) + (6 - 12a^2)$$

$$\underline{5a} - \underline{9a^3} + \underline{3a^2} + \underline{12a^3} - \underline{10a} + \underline{a^2} + \underline{6} - \underline{12a^2}$$

$$\underline{-5a} + \underline{3a^3} - \underline{8a^2} + \underline{6} \rightarrow \text{Write in descending order.}$$

$$\boxed{3a^3 - 8a^2 - 5a + 6}$$