

Polynomials (Adding / Subtracting)

Like Terms have the same **variable** and the same **exponent**.

When adding and subtracting polynomials, you add and subtract **like terms**.

Adding Polynomials

- 1) Removing parentheses and rewrite each term
- 2) Combine like terms!

Example:

$$\begin{aligned} \text{a) } (12m^2 + 4) + (8m^2 + 5) \\ \boxed{12m^2} + 4 + \boxed{8m^2} + 5 \\ 20m^2 + \boxed{4} + \boxed{5} \\ \underline{20m^2 + 9} \end{aligned}$$

$$\begin{aligned} \text{b) } (6s^2 + 3s + 7) + (2s^3 - 6s - 4) \\ 6s^2 + \boxed{3s} + 7 + 2s^3 - \boxed{6s} - 4 \\ 6s^2 - 3s + \boxed{7} + 2s^3 - \boxed{4} \\ \cancel{6s^2} - \cancel{3s} + \cancel{3} + 2s^3 \\ \underline{2s^3 + 6s^2 - 3s + 3s^0} \end{aligned}$$

Subtracting Polynomials

Subtracting is the same thing as adding the opposite.

- 1) Remove the parentheses from the 1st expression and rewrite each term; for the 2nd expression change all the signs.
- 2) combine like terms

Example:

$$\begin{aligned} \text{a) } (2x^3 + 4x^2 - 6) - 1(5x^3 + 2x^2 - 2) \\ \boxed{2x^3} + 4x^2 - 6 - \boxed{5x^3} - 2x^2 + 2 \\ -3x^3 + \boxed{4x^2} - 6 - \boxed{2x^2} + 2 \\ -3x^3 + 2x^2 - \boxed{6} + \boxed{2} \\ \underline{-3x^3 + 2x^2 - 4} \end{aligned}$$