

03/09/18 Adding/Subtracting Polynomials

To add, combine like terms. You can add horizontally or vertically.

Ex. 1: $(2 + 6r^3 + 5r^2 - 2r^4) + (6r^4 + 7 - 2r^3)$

$$(-2r^4 + 6r^4) + (6r^3 - 2r^3) + 5r^2 + (2 + 7)$$

$$= 4r^4 + 4r^3 + 5r^2 + 9$$

Horizontal
method

Ex. 2:

$$(3m - 7m^3 + 3m^4) + (6m^4 - 8m + 7m^3)$$

$$\begin{array}{r} 3m^4 - 7m^3 + 3m \\ + 6m^4 + 7m^3 - 8m \\ \hline \end{array}$$

Vertical
method

$$9m^4 - 5m$$

To subtract polynomials, we ADD the OPPOSITE.

Ex. 3: $(7n^4 + 8 + 4n^2) - (5 - 2n^4 + 2n - n^2)$

$$(7n^4 + 8 + 4n^2) + (-5 + 2n^4 - 2n + n^2)$$

$$\begin{array}{r} 7n^4 + 4n^2 + 8 \\ + 2n^4 + n^2 - 2n - 5 \\ \hline 9n^4 + 5n^2 - 2n + 3 \end{array}$$

Vertical

Ex. 4: $(3v^2 - 2 + 2v^3 - 4v) - (5v^2 + 6v + 4v^3 + 2)$

$$= -2v^3 - 2v^2 - 10v$$



Ex. 5:

$$(6 + n^3 - 6n^4) + (7 + 6n^3 + 8n) + (7n^3 + 6 - 2n)$$

$$\begin{array}{r} -6n^4 + n^3 + 6 \\ + \quad -6n^3 - 8n - 7 \\ + \quad +7n^3 - 2n + 6 \\ \hline \end{array}$$

Vertical
method

$$= -6n^4 + 2n^3 - 10n + 5$$

