

Adding and Subtracting Polynomials

Simplify each expression.

1) $(2x^3 + 6x^2) + (8x^3 + 8x^2)$

$$\begin{array}{r}
 2x^3 + 6x^2 \\
 + \quad 8x^3 + 8x^2 \\
 \hline
 10x^3 + 14x^2
 \end{array}$$

2) $(2n^2 - 8 + 5n^4) - (6n^4 - 5n^2 + 4)$

$$\begin{array}{r}
 5n^4 + 2n^2 - 8 \\
 + \quad -6n^4 + 5n^2 - 4 \\
 \hline
 -n^4 + 7n^2 - 12
 \end{array}$$

3) $(5k^2 + 5k^4 + 8k) + (2k^2 + 3 + 5k + 4k^4)$

$$\begin{array}{r}
 5k^4 + 5k^2 + 8k + 0 \\
 + \quad 4k^4 + 2k^2 + 5k + 3
 \end{array}$$

$$\boxed{9k^4 + 7k^2 + 13k + 3}$$

4) $(6n + 5 - 2n^3) + (8 - 7n^3 + n)$

$$\begin{array}{r}
 -2n^3 + 6n + 5 \\
 + \quad -7n^3 + n + 8
 \end{array}$$

$$\boxed{-9n^3 + 7n + 13}$$

5) $(8n^3 + 8n) - (-1 + 8n + 2n^3)$

$$\begin{array}{r}
 8n^3 + 8n + 0 \\
 + \quad 2n^3 + 8n - 1
 \end{array}$$

$$\boxed{10n^3 + 16n - 1}$$

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

$$\begin{array}{r}
 -3n^2 + 3n - 8 \\
 -3n^3 + 3n^2 + 7n + 0 \\
 -3n^2 + 2n + 4
 \end{array}$$

$$\boxed{-3n^3 - 3n^2 + 12n - 4}$$