Adding and Subtracting Polynomials

Simplify each expression.

1) $\left(p - 2p^3\right) - \left(4p + 4p^3\right)$

2) $\left(4 - 4b^4\right) - \left(2 - 2b^4\right)$

3) $\left(2p^2 - 3p^4\right) + \left(3p^2 - 4p^4\right)$

4) $\left(3r^4 + 4r^3\right) + \left(5r^3 + 2r^4\right)$

5) $\left(-13k - 14k^3 + 13\right) + \left(-7k^3 - 4k - 14\right)$

6) $\left(2x^4 - 5x^3 - 8x^2\right) - \left(-13x^4 + 9x^2 + 2x\right)$

7) $\left(-11 + 6r^2 + r^5\right) - \left(-11 + 11r^2 - 7r^5\right)$

8) $\left(12x^3 + 4x^4 - 14x^5\right) - \left(14x^4 + 9x^3 + 5\right)$

Simplify each expression. (Challenge)

9) $\left(-11ab^4 + 14a^4b\right) - \left(-8ab^3 - 12a^4b - 9b^4\right) - \left(-9ab^4 + 12b^4\right)$

10) $\left(4m - 2mn^3\right) + \left(10n - 13m - 14mn^3\right) + \left(6n + 7mn^3\right)$

11) $\left(7m^4n - 8mn^2\right) + \left(6m^4 + m^4n - 3mn^2\right) - \left(5mn^2 + 8m^2n^4\right)$

12) $\left(4x^2 + y^4\right) - \left(-x^3y^4 + 4x^2 - 13y^4\right) + \left(7x^2 - 7x^2y\right)$

Answers to Adding and Subtracting Polynomials (ID: 1)

1) $-6p^3 - 3p$

2) $-2b^4 + 2$

3) $-7p^4 + 5p^2$

4) $5r^4 + 9r^3$

5) $-21k^3 - 17k - 1$

6) $15x^4 - 5x^3 - 17x^2 - 2x$

7) $8r^5 - 5r^2$

8) $-14x^5 - 10x^4 + 3x^3 - 5$

9) $-2ab^4 + 26a^4b + 8ab^3 - 3b^4$

10) $-9mn^3 - 9m + 16n$

11) $-8m^2n^4 + 8m^4n + 6m^4 - 16mn^2$

12) $x^3y^4 + 14y^4 - 7x^2y + 7x^2$

Adding and Subtracting Polynomials

Simplify each expression.

1) $\left(4m^3 + 3m^4\right) + \left(3m^4 - 3m^3\right)$

2) $\left(3b^2 - 2b^3\right) - \left(3b^2 + b^3\right)$

3) $\left(5p^4 - 4p\right) + \left(5p^4 - 2p\right)$

4) $\left(2r^3 + 4r^2\right) + \left(3r^3 + 4r^2\right)$

5) $\left(-7r^4 + 7r + 9r^3\right) - \left(6r^3 - 11 - 10r\right)$

6) $\left(-3x + 3x^2 - 9x^4\right) + \left(12x^2 + 9x^4 - 11x\right)$

7) $\left(5b^2 + 9b^4 + 10b^3\right) - \left(13b^2 + 2 - 13b^4\right)$

8) $\left(6n^3 - 6n^5 - 14n\right) - \left(-13n^3 + 4n^5 + 11n\right)$

Simplify each expression. (Challenge)

9) $\left(10 - 9u^3v^3\right) + \left(6 - 6u^2v^4 + 9u^3v^3\right) + \left(-4u^2v^4 + 5\right)$

10) $\left(8x^4y^2 - x^4y^4\right) + \left(-13x^4y^4 + 11x^4y^2 + 7x^3\right) + \left(-7x^4y^2 + 7x^4y^4\right)$

11) $\left(7m^4n^4 + 3mn^2\right) + \left(13m^2n^2 + 13m^4n^4 + 10m^2\right) - \left(-13m^2 - 2m^4n^4\right)$

12) $\left(-13xy^3 + 3x^2y\right) + \left(-14x^4y^3 + 4xy^3 - 12x^2y\right) - \left(-9x^4y^3 - 3xy^3\right)$

Answers to Adding and Subtracting Polynomials (ID: 2)

1) $6m^4 + m^3$

2) $-3b^3$

3) $10p^4 - 6p$

4) $5r^3 + 8r^2$

5) $-7r^4 + 3r^3 + 17r + 11$

6) $15x^2 - 14x$

7) $22b^4 + 10b^3 - 8b^2 - 2$

8) $-10n^5 + 19n^3 - 25n$

9) $-10u^2v^4 + 21$

10) $-7x^4y^4 + 12x^4y^2 + 7x^3$

11) $22m^4n^4 + 13m^2n^2 + 3mn^2 + 23m^2$

12) $-5x^4y^3 - 6xy^3 - 9x^2y$