

Adding and Subtracting Polynomials

Date _____ Period _____

Simplify each expression. State all answers in Standard Form

1) $(6x^3 - 6x^2) + (4x^3 + 6x^2)$

$$\underline{6x^3} - \underline{6x^2} + \underline{4x^3} + \underline{6x^2}$$

$$\boxed{10x^3}$$

2) $(8 + 7r^4) - (3r^4 - r^3)$

$$8 + \underline{7r^4} - \underline{3r^4} + r^3$$

$$\boxed{4r^4 + r^3 + 8}$$

3) $(6m^2 - 2m^4) - (7m^2 - 2m^4)$

$$\underline{6m^2} - \underline{2m^4} - \underline{7m^2} + \underline{2m^4}$$

$$\boxed{-m^2}$$

4) $(5p^4 - 5p^2) + (2p^4 - 4p^2)$

$$\underline{5p^4} - \underline{5p^2} + \underline{2p^4} - \underline{4p^2}$$

$$\boxed{7p^4 - 9p^2}$$

5) $(x^4 - x^2) + (3x^4 - 6x^2)$

$$\underline{x^4} - \underline{x^2} + \underline{3x^4} - \underline{6x^2}$$

$$\boxed{4x^4 - 7x^2}$$

6) $(4x^2 + 5x) - (4x - x^2)$

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

$$\boxed{5x^2 + x}$$

7) $(1 + 5b^2 - 4b^3) + (4b^2 - 3b - 1)$

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

$$\boxed{-4b^3 + 9b^2 - 3b}$$

8) $(3x^3 - 3x^4 - x^2) + (x - 3x^4 + x^2)$

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

$$\boxed{-6x^4 + 3x^3 + x}$$

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$$9) (3m^4 + 3m + 4) + (5m^4 + 2 - m^3)$$

$$\underline{3m^4} + \underline{3m} + \underline{4} + \underline{5m^4} + \underline{2} - \underline{m^3}$$

$$8m^4 - m^3 + 3m + 6$$

$$11) (4b^4 - 2b^3 - 2) + (4 + 3b^4 + 3b^3)$$

$$\underline{4b^4} - \underline{2b^3} - \underline{2} + \underline{4} + \underline{3b^4} + \underline{3b^3}$$

$$7b^4 + b^3 + 2$$

$$13) (2n^4 + 5n^3 + 2n) - (2n^4 - 4n - n^3)$$

$$\underline{2n^4} + \underline{5n^3} + \underline{2n} - \underline{2n^4} + \underline{4n} + \underline{n^3}$$

$$6n^3 + 6n$$

$$15) (3k^4 - 2 - 2k) - (5k + 5 + 4k^4)$$

$$\underline{3k^4} - \underline{2} - \underline{2k} - \underline{5k} - \underline{5} - \underline{4k^4}$$

$$-k^4 - 7k - 7$$

$$17) (x + 1 + 2x^3) + (1 + 5x^3 + 4x)$$

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

$$7x^3 + 5x + 2$$

$$10) (5n^2 + 2 - n^3) - (3 + 5n^3 + n^2)$$

$$\underline{5n^2} + \underline{2} - \underline{n^3} - \underline{3} - \underline{5n^3} - \underline{n^2}$$

$$-6n^3 + 4n^2 - 1$$

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

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

$$-x^4 - 1$$

$$14) (2m^4 + 5m^2 - m^3) - (5m + 4m^3 - 5m^4)$$

$$\underline{2m^4} + \underline{5m^2} - \underline{m^3} - \underline{5m} - \underline{4m^3} + \underline{5m^4}$$

$$7m^4 - 5m^3 + 5m^2 - 5m$$

$$16) (3x^2 - 3 + 3x^4) - (3x^4 - 5x^2 - 3)$$

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

$$8x^2$$

$$18) (3x^3 - 3x^2 - 3x) - (4x^2 + 4x^3 + 4x^4)$$

$$\underline{3x^3} - \underline{3x^2} - \underline{3x} - \underline{4x^2} - \underline{4x^3} - \underline{4x^4}$$

$$-4x^4 - x^3 - 7x^2 - 3x$$

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