

Adding & Subtracting Polynomials

Date _____ Period _____

Simplify each sum.

1) $(5b + 6b^3) + (7b^3 + 8b)$

2) $(7 + 2n^2) + (2n^2 - 2)$

Simplify each difference.

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

4) $(8x^4 + 6) - (8x^4 - 6)$

Simplify each sum.

5) $(4v + 7v^2) + (7v + 7v^2 + 7v^4)$

6) $(6b^3 + 2b^4) + (8b^4 + 2b - 6b^3)$

Simplify each difference.

7) $(1 + 2x) - (6x + 2 - 5x^4)$

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

Simplify each sum.

9) $(4 + 4n^4 + 4n^2) + (8n^4 - 6n^2 + 1)$

10) $(8b - 1 - 7b^4) + (7b^4 + 1 - 2b)$

Simplify each difference.

11) $(5 - 2n^4 + 7n^2) - (4n^2 - 7 - n^4)$

12) $(6a^2 - 7 - 3a^3) - (7 + a^3 + 2a^2)$

Simplify each sum.

13) $(2x + 3x^2 - 4x^4 + 3) + (8x - 6 - 2x^4 - x^2)$

14) $(x + 8 - 7x^3 - 8x^2) + (3x^3 - 7 + 6x + 7x^2)$

Simplify each difference.

15) $(p^4 + 3p^2 - 4p^3 + 2p) - (7p^4 - 6p^2 + 2p^3 - 6p)$

16) $(8m^4 + m^2 - 4m - 8) - (1 - 4m + 3m^2 - m^4)$

Simplify each expression.

$$17) (2r^2 + 6r^4 + 5r^3 + 3) + (7r - 4r^3 - 7r^4 + 7r^2) + (r^3 + 5r^2)$$

$$18) (5b^3 - 6b^4 - b^2 - 7b) - (7b - 2b^4 - 7b^3 + b^2) - (2b^3 + 5b)$$

$$19) (8 + 2a^2 + 2a^4 + a) - (4a^3 - 8a^2 - 4a^4 - 2) + (3 - 7a + 5a^3)$$

$$20) (3n^2 - 8 + 6n + 5n^4) + (5 + 5n^2 - 7n^4 + 2n^3) - (4n^4 - n^2 + 8)$$

$$21) (2x^3 - 8x - 5x^4 + 7) - (4x - 2 - 6x^4 + 6x^3) - (6x + 3x^3 - 7 + 8x^4)$$

$$22) (x^3 + 5x^2 + 3x + 3x^4) + (7x^3 - 6x^2 - 8x^4 - 8) + (4 - 2x^2 + 6x^3 + 6x)$$

Answers to Adding & Subtracting Polynomials (ID: 1)

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|-------------------------------------|-------------------------------------|----------------------------------|-------------------------|
| 1) $13b^3 + 13b$ | 2) $4n^2 + 5$ | 3) $-n^3 + n$ | 4) 12 |
| 5) $7v^4 + 14v^2 + 11v$ | 6) $10b^4 + 2b$ | 7) $5x^4 - 4x - 1$ | 8) $-n^4 + 2n + 3$ |
| 9) $12n^4 - 2n^2 + 5$ | 10) $6b$ | 11) $-n^4 + 3n^2 + 12$ | 12) $-4a^3 + 4a^2 - 14$ |
| 13) $-6x^4 + 2x^2 + 10x - 3$ | 14) $-4x^3 - x^2 + 7x + 1$ | 15) $-6p^4 - 6p^3 + 9p^2 + 8p$ | |
| 16) $9m^4 - 2m^2 - 9$ | 17) $-r^4 + 2r^3 + 14r^2 + 7r + 3$ | 18) $-4b^4 + 10b^3 - 2b^2 - 19b$ | |
| 19) $6a^4 + a^3 + 10a^2 - 6a + 13$ | 20) $-6n^4 + 2n^3 + 9n^2 + 6n - 11$ | 21) $-7x^4 - 7x^3 - 18x + 16$ | |
| 22) $-5x^4 + 14x^3 - 3x^2 + 9x - 4$ | | | |