

## Adding and Subtracting Polynomials

**Simplify each expression.**

1)  $(5p^2 - 3) + (2p^2 - 3p^3)$

2)  $(a^3 - 2a^2) - (3a^2 - 4a^3)$

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

4)  $(4n - 3n^3) - (3n^3 + 4n)$

5)  $(3a^2 + 1) - (4 + 2a^2)$

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

7)  $(5a + 4) - (5a + 3)$

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

9)  $(-4k^4 + 14 + 3k^2) + (-3k^4 - 14k^2 - 8)$

10)  $(3 - 6n^5 - 8n^4) - (-6n^4 - 3n - 8n^5)$

11)  $(12a^5 - 6a - 10a^3) - (10a - 2a^5 - 14a^4)$

12)  $(8n - 3n^4 + 10n^2) - (3n^2 + 11n^4 - 7)$

13)  $(-x^4 + 13x^5 + 6x^3) + (6x^3 + 5x^5 + 7x^4)$

14)  $(9r^3 + 5r^2 + 11r) + (-2r^3 + 9r - 8r^2)$

15)  $(13n^2 + 11n - 2n^4) + (-13n^2 - 3n - 6n^4)$

16)  $(-7x^5 + 14 - 2x) + (10x^4 + 7x + 5x^5)$

17)  $(7 - 13x^3 - 11x) - (2x^3 + 8 - 4x^5)$

18)  $(13a^2 - 6a^5 - 2a) - (-10a^2 - 11a^5 + 9a)$

19)  $(3v^5 + 8v^3 - 10v^2) - (-12v^5 + 4v^3 + 14v^2)$

20)  $(8b^3 - 6 + 3b^4) - (b^4 - 7b^3 - 3)$

21)  $(k^4 - 3 - 3k^3) + (-5k^4 + 6k^3 - 8k^5)$

22)  $(-10k^2 + 7k + 6k^4) + (-14 - 4k^4 - 14k)$

23)  $(-7n^2 + 8n - 4) - (-11n + 2 - 14n^2)$

24)  $(14p^4 + 11p^2 - 9p^5) - (-14 + 5p^5 - 11p^2)$

25)  $(8k + k^2 - 6) - (-10k + 7 - 2k^2)$

26)  $(-9v^2 - 8u) + (-2uv - 2u^2 + v^2) + (-v^2 + 4uv)$

27)  $(4x^2 + 7x^3y^2) - (-6x^2 - 7x^3y^2 - 4x) - (10x + 9x^2)$

28)  $(-5u^3v^4 + 9u) + (-5u^3v^4 - 8u + 8u^2v^2) + (-8u^4v^2 + 8u^3v^4)$

29)  $(-9xy^3 - 9x^4y^3) + (3xy^3 + 7y^4 - 8x^4y^4) + (3x^4y^3 + 2xy^3)$

30)  $(y^3 - 7x^4y^4) + (-10x^4y^3 + 6y^3 + 4x^4y^4) - (x^4y^3 + 6x^4y^4)$

## Adding and Subtracting Polynomials

**Simplify each expression.**

$$1) (5p^2 - 3) + (2p^2 - 3p^3)$$

$$-3p^3 + 7p^2 - 3$$

$$2) (a^3 - 2a^2) - (3a^2 - 4a^3)$$

$$5a^3 - 5a^2$$

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

$$7n^3 + 6$$

$$4) (4n - 3n^3) - (3n^3 + 4n)$$

$$-6n^3$$

$$5) (3a^2 + 1) - (4 + 2a^2)$$

$$a^2 - 3$$

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

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

$$7) (5a + 4) - (5a + 3)$$

$$1$$

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

$$6x^4 - 6x$$

$$9) (-4k^4 + 14 + 3k^2) + (-3k^4 - 14k^2 - 8)$$

$$-7k^4 - 11k^2 + 6$$

$$10) (3 - 6n^5 - 8n^4) - (-6n^4 - 3n - 8n^5)$$

$$2n^5 - 2n^4 + 3n + 3$$

$$11) (12a^5 - 6a - 10a^3) - (10a - 2a^5 - 14a^4)$$

$$14a^5 + 14a^4 - 10a^3 - 16a$$

$$12) (8n - 3n^4 + 10n^2) - (3n^2 + 11n^4 - 7)$$

$$-14n^4 + 7n^2 + 8n + 7$$

$$13) (-x^4 + 13x^5 + 6x^3) + (6x^3 + 5x^5 + 7x^4)$$

$$18x^5 + 6x^4 + 12x^3$$

$$14) (9r^3 + 5r^2 + 11r) + (-2r^3 + 9r - 8r^2)$$

$$7r^3 - 3r^2 + 20r$$

$$15) (13n^2 + 11n - 2n^4) + (-13n^2 - 3n - 6n^4)$$

$$-8n^4 + 8n$$

$$16) (-7x^5 + 14 - 2x) + (10x^4 + 7x + 5x^5)$$

$$-2x^5 + 10x^4 + 5x + 14$$

$$17) (7 - 13x^3 - 11x) - (2x^3 + 8 - 4x^5)$$

$$4x^5 - 15x^3 - 11x - 1$$

$$18) (13a^2 - 6a^5 - 2a) - (-10a^2 - 11a^5 + 9a)$$

$$5a^5 + 23a^2 - 11a$$

$$19) (3v^5 + 8v^3 - 10v^2) - (-12v^5 + 4v^3 + 14v^2)$$

$$15v^5 + 4v^3 - 24v^2$$

$$20) (8b^3 - 6 + 3b^4) - (b^4 - 7b^3 - 3)$$

$$2b^4 + 15b^3 - 3$$

$$21) (k^4 - 3 - 3k^3) + (-5k^4 + 6k^3 - 8k^5)$$

$$-8k^5 - 4k^4 + 3k^3 - 3$$

$$22) (-10k^2 + 7k + 6k^4) + (-14 - 4k^4 - 14k)$$

$$2k^4 - 10k^2 - 7k - 14$$

$$23) (-7n^2 + 8n - 4) - (-11n + 2 - 14n^2)$$

$$7n^2 + 19n - 6$$

$$24) (14p^4 + 11p^2 - 9p^5) - (-14 + 5p^5 - 11p^2)$$

$$-14p^5 + 14p^4 + 22p^2 + 14$$

$$25) (8k + k^2 - 6) - (-10k + 7 - 2k^2)$$

$$3k^2 + 18k - 13$$

$$26) (-9v^2 - 8u) + (-2uv - 2u^2 + v^2) + (-v^2 + 4uv)$$

$$-9v^2 + 2uv - 2u^2 - 8u$$

$$27) (4x^2 + 7x^3y^2) - (-6x^2 - 7x^3y^2 - 4x) - (10x + 9x^2)$$

$$14x^3y^2 + x^2 - 6x$$

$$28) (-5u^3v^4 + 9u) + (-5u^3v^4 - 8u + 8u^2v^2) + (-8u^4v^2 + 8u^3v^4)$$

$$-2u^3v^4 - 8u^4v^2 + 8u^2v^2 + u$$

$$29) (-9xy^3 - 9x^4y^3) + (3xy^3 + 7y^4 - 8x^4y^4) + (3x^4y^3 + 2xy^3)$$

$$-8x^4y^4 - 6x^4y^3 + 7y^4 - 4xy^3$$

$$30) (y^3 - 7x^4y^4) + (-10x^4y^3 + 6y^3 + 4x^4y^4) - (x^4y^3 + 6x^4y^4)$$

$$-9x^4y^4 - 11x^4y^3 + 7y^3$$