

Polynomials - two variables - integers

Simplify each expression.

1) $(2xy^4 - 8y^4 + x^3y^4) + (-xy^4 + 2x^3y^4 - 3y^4) + (-7y^4 + 10x^3y^4 + 5xy^4)$

2) $(2 + 6xy^4 + 5x^4y^2) + (-1 - 2x^3 + 2xy^4) + (-5xy^2 + 3x^3 - 8x^4y^2)$

3) $(10x^3y^2 + 2y^4 - 2x^2y^3) + (-5xy^3 - x^3 + 10x^3y^4) + (4x^3y^4 - 5x^2y^3 + 6x^3)$

$$4) (10uv^3 - 3u^2v^4 + 5uv^4) + (6u^4v^3 - 3uv^3 + 7u^2) - (-2uv^4 + 2uv^3 - 5u^2)$$

$$5) (6uv^4 + 8v^4 + 5u^3v^2) - (-2v^4 - 7uv^4 + 10u^3v^2) + (6uv^4 - 10u^3v^2 - v^4)$$

$$6) (-3a + 4a^3b^3 - b^4) + (-9b^4 + 10a - 6a^3b^3) + (-7a^3b^3 + 6b^4 - 7a)$$

$$7) (-5x^2y^4 + 9xy - y^4) - (2xy + 2x^2y^4 - 3x^2y^2) + (3y^4 + 3x^2y^2 + 8xy)$$

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

$$9) (5x^2y - 5x^3y^3 + 6) + (xy + 7x^2y - 7) + (10 + 4xy - 3x^3y^3)$$

$$10) (-3x^2 + 6x^2y^4 - 7x^4y^4) - (-10x^4y + 1 - 2x^2y^4) - (-5 + 2x^2 - 10x^2y)$$

$$11) (6y - 4y^4 - 6x^2y) + (-y^4 - 4xy^4 - 8x^2y) + (8y^4 + 6x^3y^3 + 7y)$$

$$12) (-8u^4v^2 - 6u^4 - u^3v^3) - (-10u^4 + 4u^4v^2 - 10u^3v^3) + (-3u^3v^3 - 10u^4 + 9u^4v^2)$$

$$13) (4xy + 6x + 3x^4y) - (10x^4y^3 + 3x + 5x^4y) + (-6xy + 10x^4y^3 + 10x)$$

$$14) (-6xy + 3x^3 - 7x) - (-2x^4y + 4y^3 - xy) + (-6xy + 7x + 6y^3)$$

$$15) (2m^4n^3 + 9mn + 5m) - (-8m^3n^2 - 10m - 4mn) - (9mn - 4m^3n^2 - 5m)$$

$$16) (-a^2b^3 - 6a^4b^2 - 4a^4b^3) - (2a^2 + a^4b^2 - 6ab^3) + (-2a^2b^3 + 5a^4b^3 + 3a^2b^2)$$

$$17) (9y^2 + 4x^3y^3 - 9) + (-2 - 10y^2 - 6x^3y^3) - (-8 - 6y^2 + 4x^3y^3)$$

$$18) (-4x^3y^3 - 10x^2 - 8xy^2) - (-6xy^2 + 7x^3y^3 - 6x^2) + (4x^3y^3 - 2xy^2 - 7x^2)$$

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

$$20) (-7y^3 + 8y^4 - 10x^2y^3) - (-10x^3 + 9y^3 + 6x) + (-9y^3 + 7x - 9x^2y^3)$$

$$21) (10x^4 - 10x^3y^2 - 3) - (9x^3y^3 + 7x^3y^2 - 4x^4) + (x^3y^2 + 3x^3y^3 - 10x^4)$$

$$22) (-9a^3b^4 + 3ab^2 - 3a^2b^4) + (-2b^2 + 6a^2b^3 + 3a^2b^4) + (6ab^2 - 2a^2b^3 + 5a^2b^4)$$

$$23) (3ab^2 - 5ab^4 + 10b^4) + (2b^4 + 6ab^2 - 10ab^4) + (-10b^4 - ab^2 - 7ab^4)$$

$$24) (-2x^3y^4 - 3x^2y^2 - 4) - (x^2y^2 - 9x^3y^4 - 6x^4y^4) + (x^2y^2 - 7x^3y^4 - 9x^4y^4)$$

$$25) (-4xy^4 + 2x^4y^3 + x^4y^4) - (x^2y^3 + x^4 - 5x^4y^4) + (-8x^4y^4 + 4x^4 + 4x^2y^3)$$

$$26) (6x^2y - x^4 - 6y^3) - (-7x^2y + 9x^4 + 9x^2y^2) - (-7x^2y^2 + 3x^4 - x^2y)$$

$$27) (7m^2 - 5m^3n^4 + 2mn) + (7m^2n^2 - 2m^4n^4 - mn) - (-7m^2n^2 + 3mn + 10m^3n^4)$$

$$28) (-u^3v^4 + 5uv + 10uv^4) - (10uv^4 - 8uv + 7u^3v^4) - (-4uv - 6uv^4 - 6u^3v^4)$$

$$29) (-2xy^2 + 7xy + 7x^2y^3) + (-6xy - 7x^2y^3 - 5xy^2) - (7xy - 5x^2y^3 + 4xy^2)$$

$$30) (-a^4 - a^3b^2 - 5a^3b) - (-ab - 3a^4b^2 + 8a^3b^2) + (-4a^4b^2 + 7a^3b + 8ab)$$

Answers to Polynomials - two variables - integers

- 1) $13x^3y^4 + 6xy^4 - 18y^4$ 2) $-3x^4y^2 + 8xy^4 + x^3 - 5xy^2 + 1$
3) $14x^3y^4 - 7x^2y^3 + 10x^3y^2 - 5xy^3 + 2y^4 + 5x^3$ 4) $6u^4v^3 - 3u^2v^4 + 7uv^4 + 5uv^3 + 12u^2$
5) $19uv^4 - 15u^3v^2 + 9v^4$ 6) $-9a^3b^3 - 4b^4$
7) $-7x^2y^4 + 2y^4 + 6x^2y^2 + 15xy$ 8) $-x^4y^3 + 6x^4 + y - 4$
9) $-8x^3y^3 + 12x^2y + 5xy + 9$ 10) $-7x^4y^4 + 8x^2y^4 + 10x^4y + 10x^2y - 5x^2 + 4$
11) $6x^3y^3 - 4xy^4 + 3y^4 - 14x^2y + 13y$ 12) $-3u^4v^2 + 6u^3v^3 - 6u^4$
13) $-2x^4y - 2xy + 13x$ 14) $2x^4y + 3x^3 + 2y^3 - 11xy$
15) $2m^4n^3 + 12m^3n^2 + 4mn + 20m$ 16) $a^4b^3 - 7a^4b^2 - 3a^2b^3 + 6ab^3 + 3a^2b^2 - 2a^2$
17) $-6x^3y^3 + 5y^2 - 3$ 18) $-7x^3y^3 - 4xy^2 - 11x^2$
19) $-u^4v^4 + 5u^4v^3 - 8u^2v^4 + 2u^2v^3 - 10u^3v$ 20) $-19x^2y^3 + 8y^4 - 25y^3 + 10x^3 + x$
21) $-6x^3y^3 - 16x^3y^2 + 4x^4 - 3$ 22) $-9a^3b^4 + 5a^2b^4 + 4a^2b^3 + 9ab^2 - 2b^2$
23) $-22ab^4 + 2b^4 + 8ab^2$ 24) $-3x^4y^4 - 3x^2y^2 - 4$
25) $-2x^4y^4 + 2x^4y^3 - 4xy^4 + 3x^2y^3 + 3x^4$ 26) $-13x^4 - 2x^2y^2 - 6y^3 + 14x^2y$
27) $-2m^4n^4 - 15m^3n^4 + 14m^2n^2 - 2mn + 7m^2$ 28) $-2u^3v^4 + 6uv^4 + 17uv$
29) $5x^2y^3 - 11xy^2 - 6xy$ 30) $-a^4b^2 - 9a^3b^2 + 2a^3b - a^4 + 9ab$