

## Polynomials - two variables - decimals

**Simplify each expression.**

$$1) (9x^4y^4 - 3.1y - 3.27x^4y) + (-5.8y + 0.1x^4y^4 - 1.836x^4y) + (-9.8x^4y + 4.3x^4y^4 + 3.2y)$$

$$2) (-4.2uv^4 - 4.83uv + 7.6uv^3) - (7.5uv^4 - 3.9uv - 9u^4v^2) - (-9.7u^4v^2 + 1.8uv^3 + 1.4uv)$$

$$3) (-4y^4 + 2.1x^2 - 0.4x^4) + (1.9x^2 - 9.6y^3 + 0.6x^4) - (-1.8y^4 + 6.5y^3 - 9.7x^2)$$

$$4) (-9.5a + 3.1a^4b^4 + 7.6ab) + (-7.056b^2 + 6a - 7.4ab) + (8.29a^4b^4 + 8.1b^2 + 0.9ab)$$

$$5) (-9.9 - 6xy^2 - 5.5x^2y^4) + (4.7xy^2 + 2.9xy^4 + 7.5y^2) - (3.3xy^2 + 5.5y^2 + 3.1x^2y^3)$$

$$6) (7.133x^3 - 1.3x^3y - 9y^3) - (-7.4y^3 + 9.2x^3y + 7.923x^3) + (-9.94x^3y - 2.2y^3 + 0.3x^3)$$

$$7) (8.5n^4 + 3.1mn^4 - 1.3n^2) + (-1.1n^2 - 3.6m^2n^4 + 9.1m^3n^2) + (-5.2n^2 + 6.1mn^4 + 2.8n^4)$$

$$8) (4.3y^3 - 1.6x^4 + 2.6x^2y^2) + (6.3x^4y^2 + 2.3x^2y^2 + 4.8y^3) + (-8y^3 + 6.1x^4y^2 + 8.7x^4)$$

$$9) (-3.4 - 8.8xy + 5.8x^2y^4) - (-4.5x - 2.8 - 9y^3) + (2.5x^2y^4 - 5.1 + 2x^4y^3)$$

$$10) (10xy^2 - 6.207x - 1.4x^4) + (-2.7xy^2 + 1.74x - 9.9x^4y^4) - (-2.516xy^2 + 7.7x^4y^4 + 3.6x^4)$$

$$11) (-2.8b^4 - 8.842b^3 - 2.124a^2) - (3.3b^3 + 2.4a^2 - 5.3b^4) + (-5.7a^2 + 9.8b^3 + 6.3b^4)$$

$$12) (0.5x^4y^2 - 9.1x^4 - 1.8x^3y) + (4.5y^4 - 1.5x^4y^2 - 10x^4) + (-5.5x^4y^2 + 9.2x^4 + 7.2y^4)$$

$$13) (-10mn^4 + 0.2m^3n + 8.4m^4n) - (0.6mn^4 - 8.5m^3n^2 + 1.6m^3n) - (3.3m^3n + 1.2m^4n + 2.8mn^4)$$

$$14) (8.26x^2y^2 - 5.3x^3y - 4.1y^2) - (-5.5y^2 - 4x^4y + 2x^3y) + (6.1x^3y + 1.18x^3 - 3x^2y^2)$$

$$15) (-8.4m^3n - 8.7m^2n^3 + 9.9m^4n^3) + (-4.3m^4n^2 + 8.5m^4n^3 + 8.8m^3n) + (2.1m^4n^3 - 0.18m^2n^3 - 9.7m^3n)$$

$$16) (x^4 + 4y - 4.2x^4y) - (-9.6x^4y + 1.7y - 0.64y^4) - (5.6xy^2 + 1.3y^4 - 4.7y)$$

$$17) (-0.9y^4 + 3.815x^2y - 0.4x^4y^3) - (5.2x^2y + 0.8x^4y^3 + 6.6y^4) + (6.7x^2y + 7.1x^4y^3 + 3.6y^4)$$

$$18) (1.1x^2y - 3.272x^2y^2 - 4x^2) - (5.8x^3y^2 + 9.4x^2y^2 - 8.9x^2) + (-3.3y + 3x^3y^2 - x^2)$$

$$19) (8.3xy^3 + 2.8x^2y + 4.4xy^2) - (-8.941xy^2 + 3.2x^2y^4 - 2.4xy^3) - (-8x^4y + 8.3x^2y^4 - 7.3xy^2)$$

$$20) (-7.4uv^2 + 5.1u^3v^2 - 6.154u^2v^3) + (-4.3uv^4 + 7.8uv^2 + 0.9u^2v^3) + (-4.3u^4v^4 - 4.1uv^4 - 8.8u^3v^2)$$

$$21) (-4.1a^4b^4 + 8.5a^2b^2 + 3.1ab^3) - (-1.8ab^3 + 5.1a^4b^4 - 0.1a^2b^2) - (1.4ab^3 + 4.9a^2b^3 - 0.9a^4b^4)$$

$$22) (-0.98x^2y^3 + 4.1x^2y - 0.1x^4y^4) + (4.1x^2y + 9.9x^2y^3 - 9.4x^4y^4) - (7.1x^2y + 1.4x^2y^3 - 2.3x^4y^4)$$

$$23) (4.9m^2n^2 - 7.8n^3 - 1.55mn^4) + (-0.6n^3 + 3.4mn^4 + 3.7m^2n^2) - (-5.1mn^4 - 7.336m^2n^2 + 9.4n^3)$$

$$24) (-6.5m^2n^3 + 4.6m^4 + 5.4) - (-7.8mn^4 - 2.306m^4 + 7.5m^2n^3) + (-9.71m^2n^3 + 2.7 - 6.86m^4)$$

$$25) (-2.6xy^2 - 3.8x^4 + 4.9x^3y^4) - (-3.31xy^2 - 2x^4 + 5.5y^2) - (-8.5y^3 + 9x^3y^4 - 6.75y^2)$$

$$26) (-5.4y^4 + 2.4x - 1.1x^4y^3) - (-9.6y^4 + 7.4x + 6.08x^4y^3) + (-7.7x^2y^3 + 0.7y^4 - 0.4x^4y^3)$$

$$27) (6.9uv^2 + 5.4uv^3 + 5.3u^3) + (-9uv^3 - u^4v^2 + 1.689u^3) - (0.3uv^3 - 4.2u^3v^3 + 2.8u^3)$$

$$28) (6.8u^2v + 2.7v^4 + 1.6u^3v^3) + (5.9u^3v^3 + 5.6u^2v + 1.18v^4) + (-4.8v^4 - 2.2u^3v^3 + 8.8u^2v)$$

$$29) (-6.4x^3 + 6.5x^2 + 0.131x) + (-8.9x - 7.1x^2y^4 + 0.8) + (-0.6x^2 + 9x^3 + 4.3x)$$

$$30) (-4.91a^4b^2 + 3.9b^3 - 1.5a^2) + (-3.2a^4b^2 - 3.4 + 9.18b^4) - (-5.59b^3 + 0.9 + 5a^4b^2)$$

## Answers to Polynomials - two variables - decimals

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|--|--|
| 1) $13.4x^4y^4 - 14.906x^4y - 5.7y$                            | 2) $18.7u^4v^2 - 11.7uv^4 + 5.8uv^3 - 2.33uv$        |
| 3) $-2.2y^4 + 0.2x^4 - 16.1y^3 + 13.7x^2$                      | 4) $11.39a^4b^4 + 1.1ab + 1.044b^2 - 3.5a$           |
| 5) $-5.5x^2y^4 + 2.9xy^4 - 3.1x^2y^3 - 4.6xy^2 + 2y^2 - 9.9$   |  |
| 6) $-20.44x^3y - 0.49x^3 - 3.8y^3$                             |  |
| 7) $-3.6m^2n^4 + 9.2mn^4 + 9.1m^3n^2 + 11.3n^4 - 7.6n^2$       |  |
| 8) $12.4x^4y^2 + 7.1x^4 + 4.9x^2y^2 + 1.1y^3$                  | 9) $2x^4y^3 + 8.3x^2y^4 + 9y^3 - 8.8xy + 4.5x - 5.7$ |
| 10) $-17.6x^4y^4 - 5x^4 + 9.816xy^2 - 4.467x$                  | 11) $8.8b^4 - 2.342b^3 - 10.224a^2$                  |
| 12) $-6.5x^4y^2 - 9.9x^4 - 1.8x^3y + 11.7y^4$                  | 13) $-13.4mn^4 + 7.2m^4n + 8.5m^3n^2 - 4.7m^3n$      |
| 14) $4x^4y - 1.2x^3y + 5.26x^2y^2 + 1.18x^3 + 1.4y^2$          | 15) $20.5m^4n^3 - 4.3m^4n^2 - 8.88m^2n^3 - 9.3m^3n$  |
| 16) $5.4x^4y + x^4 - 0.66y^4 - 5.6xy^2 + 7y$                   | 17) $5.9x^4y^3 - 3.9y^4 + 5.315x^2y$                 |
| 18) $-2.8x^3y^2 - 12.672x^2y^2 + 1.1x^2y + 3.9x^2 - 3.3y$      |  |
| 19) $-11.5x^2y^4 + 8x^4y + 10.7xy^3 + 20.641xy^2 + 2.8x^2y$    |  |
| 20) $-4.3u^4v^4 - 3.7u^3v^2 - 5.254u^2v^3 - 8.4uv^4 + 0.4uv^2$ |  |
| 21) $-8.3a^4b^4 - 4.9a^2b^3 + 3.5ab^3 + 8.6a^2b^2$             | 22) $-7.2x^4y^4 + 7.52x^2y^3 + 1.1x^2y$              |
| 23) $6.95mn^4 + 15.936m^2n^2 - 17.8n^3$                        | 24) $-23.71m^2n^3 + 7.8mn^4 + 0.046m^4 + 8.1$        |
| 25) $-4.1x^3y^4 - 1.8x^4 + 0.71xy^2 + 8.5y^3 + 1.25y^2$        | 26) $-7.58x^4y^3 - 7.7x^2y^3 + 4.9y^4 - 5x$          |
| 27) $-u^4v^2 + 4.2u^3v^3 - 3.9uv^3 + 6.9uv^2 + 4.189u^3$       |  |
| 28) $5.3u^3v^3 - 0.92v^4 + 21.2u^2v$                           | 29) $-7.1x^2y^4 + 2.6x^3 + 5.9x^2 - 4.469x + 0.8$    |
| 30) $-13.11a^4b^2 + 9.18b^4 + 9.49b^3 - 1.5a^2 - 4.3$          |  |