

Adding and Subtracting
Polynomials

1. Determine the coefficient and degree of each monomial

$$7x^5$$

2. Determine the coefficient and degree of each monomial

$$-x^2y^4$$

3. State why each of the following is not a polynomial

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

4. State why each of the following is not a polynomial

$$\frac{x^5 - 3}{x}$$

5. Determine whether the algebraic expression is a polynomial (Yes or No). If it is a polynomial, write the polynomial in standard form, determine the degree, and state if it is a monomial, binomial, or trinomial. If it is a polynomial with more than 3 terms, identify the expression as a polynomial.

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

6. Determine whether the algebraic expression is a polynomial (Yes or No). If it is a polynomial, write the polynomial in standard form, determine the degree, and state if it is a monomial, binomial, or trinomial. If it is a polynomial with more than 3 terms, identify the expression as a polynomial.

$$\frac{3}{x^2}$$

7. Determine whether the algebraic expression is a polynomial (Yes or No). If it is a polynomial, write the polynomial in standard form, determine the degree, and state if it is a monomial, binomial, or trinomial. If it is a polynomial with more than 3 terms, identify the expression as a polynomial.

$$7x - x^{\frac{1}{2}}$$

8. Determine whether the algebraic expression is a polynomial (Yes or No). If it is a polynomial, write the polynomial in standard form, determine the degree, and state if it is a monomial, binomial, or trinomial. If it is a polynomial with more than 3 terms, identify the expression as a polynomial.

$$5$$

9. Determine whether the algebraic expression is a polynomial (Yes or No). If it is a polynomial, write the polynomial in standard form, determine the degree, and state if it is a monomial, binomial, or trinomial. If it is a polynomial with more than 3 terms, identify the expression as a polynomial.

$$2 + 3x + 4x^3 - x^2$$

10. Determine whether the algebraic expression is a polynomial (Yes or No). If it is a polynomial, write the polynomial in standard form, determine the degree, and state if it is a monomial, binomial, or trinomial. If it is a polynomial with more than 3 terms, identify the expression as a polynomial.

$$x + x^{-5}$$

11. Simplify each polynomial by adding or subtracting, as indicated. Express your answer as a single polynomial in standard form.

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

12. Simplify each polynomial by adding or subtracting, as indicated. Express your answer as a single polynomial in standard form.

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

13. Simplify each polynomial by adding or subtracting, as indicated. Express your answer as a single polynomial in standard form.

$$\left(\frac{2}{3}x^2 + \frac{1}{2}x - 4\right) + \left(\frac{5}{2}x^2 - \frac{7}{3}x + 7\right)$$