

Introduction to Polynomials (ALG.POL.02)

Classify each polynomial based on its degree and number of terms. Then write the polynomial in standard form.

1. $p^3 - 3p^7 + 6p^5$

2. $5k^{10} - 8k^6$

3. $\frac{3}{8}d^6$

4. $7 - j$

5. $-11 + x^3 + 9x - 4x^2$

6. $6x^9 - 8x^{15}$

7. $3m - 8 + 5m^2$

8. $4c - 2c^3 + 5 + 7c^5 - 8c^2$

9. $5x^3 - 2x + 2x^8 - 7x^4$

10. $13x^9$

Write a polynomial in standard form for each classification.

11. cubic trinomial

12. sextic monomial

13. octic polynomial with four terms

14. septic trinomial

15. linear binomial

16. quartic binomial

17. nonic polynomial with five terms

18. 14th degree monomial

19. constant monomial

20. quintic polynomial with six terms

Use the given polynomial to answer each part.

21. $5x^3 - 11x^2 + x - 4$

- What is the leading coefficient?
- What is the linear term?
- What is the constant?
- What is the coefficient of the quadratic term?

22. $-12x^6 + 7x^4 - 5x^2 + 13$

- a. What is the leading coefficient?
- b. What is the quartic term?
- c. What is the coefficient of the quadratic term?
- d. What is the degree of the polynomial?

23. $8x^9 + 14x^7 - 15x^5 - 3x$

- a. What is the degree of the polynomial?
- b. What is the leading coefficient?
- c. How many terms are in the polynomial?
- d. What is the octic term?

24. $-14x^{12} + 120$

- a. What is the degree of the polynomial?
- b. How many terms are in the polynomial?
- c. What is the classification of the polynomial?
- d. What is the leading coefficient?