

Write each polynomial in standard form. Determine if it is a monomial, binomial, or trinomial. State the degree of the polynomial.

1) $-15x + 2x^2$

2) $-15x + 2 - 3x^2$

3) $5x$

Determine whether each expression is a polynomial. If it is NOT a polynomial, explain WHY.

4) $6m^{-4}$

5) $3x^2 - \sqrt{x}$

6) $4x^2 + 5$

Simplify each expression using addition or subtraction.

7) $(2f^3 - 6f^2 + 9) + (f^3 - 4f^2 - 8)$

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

Determine the product of the polynomials using the Distributive Property.

9) $2x(x - 4)$

10) $2x(x^2 + 4x - 3)$

11) $-(n^2 + 2n - 7)$

Determine the product using one of the following methods: Distributive Property, FOIL, or Multiplication Tables.

12) $(x + 4)(2x - 4)$

13) $(2x + 1)(3x - 3)$

Determine the product using either the Distributive Property or Multiplication Tables.

14) $(x - 2)(x^2 - 3x + 4)$

15) $(2c + 3)(c^2 - 5c - 8)$

Factor out the GCF for each polynomial.

16) $y^3 + 2y^2 + 10y$

17) $2q + 18$

18) $2x^3 - 12x$

Factor each polynomial. Remember to factor out the GCF first, if possible.

19) $x^2 - 2x - 8$

20) $5k^2 + 5k - 10$

21) $3x^2 - 13x + 10$

SOLVE each quadratic equation by factoring.

22) $x^2 + 10x + 24 = 0$

23) $w^2 - 13w + 40 = 0$

24) $a^2 - 2a - 15 = 0$

25) $n^2 - 6n + 9 = 0$

26) $5x^2 + 10x = 0$

27) $3m^2 + 16 = -14m$

28) What do the solutions to a quadratic equation represent on a graph?