

Solving Polynomial Equations

Quadratic Equation - An equation of the form $ax^2 + bx + c = 0$, where a , b and c are real numbers and $a \neq 0$.

Methods to Solve Quadratic Equations

1. Factoring
2. Square Root Method
3. Completing the Square
4. Quadratic Formula

Polynomial Equation - An equation of the form $a_n x^n + a_{n-1} x^{n-1} + \cdots + a_1 x^1 + a_0 = 0$.

Directions: Find all solutions to each polynomial equation.

1. $20x^3 - 125x = 0$

2. $x^4 - 256 = 0$

3. $x^3 - 216 = 0$

4. $27x^3 - 64 = 0$

5. $16x^4 - 40x^3 + 25x^2 = 0$

6. $x^3 - 3x^2 + 4x - 12 = 0$

$$7. x^3 - 6x^2 - 2x + 12 = 0$$

$$8. x^4 + 5x^2 - 24 = 0$$

9. $36x^4 + 19x^2 - 7 = 0$

10. $x^6 + 9x^3 + 8 = 0$