

Solving Polynomial Equations

Solve each equation.

1) $2n^3 - n^2 - 136n = 0$

2) $5x^3 + 4x^2 - 57x = 0$

3) $6n^4 + 9n^3 + 3n^2 = 0$

4) $2n^3 + 24n^2 - 56n = 0$

5) $x^3 - x = 0$

6) $2r^5 - 6r^4 - 56r^3 = 0$

7) $12b^3 - 2b^2 - 30b = 0$

8) $4r^4 - 64r^2 = 0$

9) $12b^3 + 6b^2 = 18b$

10) $6v^3 - 42v = -4v^2$

11) $2n^4 - 27n^2 = -3n^3$

12) $5y^3 - 126y = 9y^2$

13) $6r^3 + 5r^2 + 2r = 9r^2 + 4r^3$

14) $16x^3 - 28x^2 + 4x = -8x$

15) $34n^3 - 48n = 22n^3$

16) $2x^3 - 4x^2 - 96x = -8x^2$

17) $3r^3 + 8r^2 = 9r + 5r^2$

18) $10x^3 - 20x = -5x^2$

19) $12v^3 + 18v = 30v + 12v^2$

20) $3x^4 - 3x^3 = 10x^2$

Answers to Solving Polynomial Equations

- 1) $\{0, \frac{17}{2}, -8\}$ 2) $\{0, 3, -\frac{19}{5}\}$ 3) $\{0, -\frac{1}{2}, -1\}$ 4) $\{0, 2, -14\}$
5) $\{0, 1, -1\}$ 6) $\{0, 7, -4\}$ 7) $\{0, \frac{5}{3}, -\frac{3}{2}\}$ 8) $\{0, 4, -4\}$
9) $\{0, 1, -\frac{3}{2}\}$ 10) $\{0, \frac{7}{3}, -3\}$ 11) $\{0, 3, -\frac{9}{2}\}$ 12) $\{0, 6, -\frac{21}{5}\}$
13) $\{0, 1\}$ 14) $\{0, 1, \frac{3}{4}\}$ 15) $\{0, 2, -2\}$ 16) $\{0, 6, -8\}$
17) $\{0, \frac{-1 + \sqrt{13}}{2}, \frac{-1 - \sqrt{13}}{2}\}$ 18) $\{0, \frac{-1 + \sqrt{33}}{4}, \frac{-1 - \sqrt{33}}{4}\}$ 19) $\{0, \frac{1 + \sqrt{5}}{2}, \frac{1 - \sqrt{5}}{2}\}$
20) $\{0, \frac{3 + \sqrt{129}}{6}, \frac{3 - \sqrt{129}}{6}\}$