

Name:

Date: Score:

Finding Roots of Polynomial Equations

Find all the real roots of each polynomial equation by factoring

1 $3x^3 + 10x^2 - 27x = 10$

2 $x^3 + 10x^2 + 17x = 28$

Solve and identify the roots of each equation. State the multiplicity of each root

3 $x^3 - 7x^2 + 11x - 5 = 0$

4 $x^3 + 10x^2 + 17x = 28$

Find a third-degree polynomial equation with the given roots

5 $-1, 3 + i$

6 $6, 3 - 2i$

Solve and identify the roots of each equation. State the multiplicity of each root

7 $2x^3 + 13x^2 + 17x - 12 = 0$

8 $4x^3 - 12x^2 - x + 3 = 0$

Name:

Date: Score:

Finding Roots of Polynomial Equations

Answers

1 $3x^3 + 10x^2 - 27x = 10$

$\{2, -\frac{1}{3}, -5\}$

2 $x^3 + 10x^2 + 17x = 28$

$\{1, -4, -7\}$

3 $x^3 - 7x^2 + 11x - 5 = 0$

Root: 5, Multiplicity: 1

Root: 1, Multiplicity: 2

4 $x^3 + 10x^2 + 17x = 28$

Root: 1, Multiplicity: 1

Root: -4, Multiplicity: 1

Root: -7, Multiplicity: 1

5 $-1, 3 + i$

$x^3 - 5x^2 + 4x + 10 = 0$

6 $6, 3 - 2i$

$x^3 - 12x^2 + 49x - 78 = 0$

7 $2x^3 + 13x^2 + 17x - 12 = 0$

$\{-4, -3, \frac{1}{2}\}$

8 $4x^3 - 12x^2 - x + 3 = 0$

$\{3, \frac{1}{2}, -\frac{1}{2}\}$