

Solving Quadratics

Solve each equation by taking square roots.

1) $8m^2 - 4 = 196$

$$\{5, -5\}$$

2) $-4 - 3m^2 = -199$

$$\{\sqrt{65}, -\sqrt{65}\}$$

3) $100n^2 + 4 = -5$

$$\left\{\frac{3i}{10}, -\frac{3i}{10}\right\}$$

4) $2n^2 - 8 = -15$

$$\left\{\frac{i\sqrt{14}}{2}, -\frac{i\sqrt{14}}{2}\right\}$$

Solve each equation by factoring.

5) $25x^2 = 4$

$$\left\{\frac{2}{5}, -\frac{2}{5}\right\}$$

6) $v^2 = 15 - 2v$

$$\{-5, 3\}$$

7) $3x^2 - 15x = 18$

$$\{-1, 6\}$$

8) $n^2 = -7n$

$$\{-7, 0\}$$

$$9) 7v^2 + 10v - 6 = -v$$

$$\left\{ \frac{3}{7}, -2 \right\}$$

$$10) 8a^2 + 7a - 4 = 3a^2 - 6$$

$$\left\{ -\frac{2}{5}, -1 \right\}$$

$$11) 16x^3 + 20x^2 + 4x + 5 = 0$$

$$-\frac{i}{2}, \frac{i}{2}, -\frac{5}{4}$$

$$12) 7n^3 - 4n^2 - 42n + 24 = 0$$

$$\left(\sqrt{6}, -\sqrt{6}, \frac{4}{7} \right)$$

Solve each equation with the quadratic formula.

$$13) n^2 = -4 + 4n$$

$$\{2\}$$

$$14) 2n^2 - 5 = -3n$$

$$\left\{ 1, -\frac{5}{2} \right\}$$

$$15) 9n^2 = 13 + 9n$$

$$\left\{ \frac{3 + \sqrt{61}}{6}, \frac{3 - \sqrt{61}}{6} \right\}$$

$$16) 7k^2 + 7k = -7$$

$$\left\{ \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2} \right\}$$

$$17) 3a^2 - 6a = -8$$

$$\left\{ \frac{3 + i\sqrt{15}}{3}, \frac{3 - i\sqrt{15}}{3} \right\}$$

$$18) 5x^2 + 2x = -7$$

$$\left\{ \frac{-1 + i\sqrt{34}}{5}, \frac{-1 - i\sqrt{34}}{5} \right\}$$

Solve each equation by any method.

$$19) 7p^2 + 8 = p$$

$$\left\{ \frac{1 + i\sqrt{223}}{14}, \frac{1 - i\sqrt{223}}{14} \right\}$$

$$20) 4x^2 + 1 = -4x$$

$$\left\{ -\frac{1}{2} \right\}$$

$$21) 11n^2 + 11n = -12$$

$$\left\{ \frac{-11 + i\sqrt{407}}{22}, \frac{-11 - i\sqrt{407}}{22} \right\}$$

$$22) 5x^2 = 5$$

$$\{1, -1\}$$