

Name:

Date: Score:

Solving Polynomial Equations

① $6a^3 - 42a = -4a^2$

② $p^2 - 2p + 17 = 0$

③ $r^2 - 8r - 15 = 0$

④ $(x^2 + 3)(x^2 - 2) = 0$

⑤ $4x^2 - 100 = 0$

⑥ $x^2 - 25x + 24 = 0$

⑦ $(x^2 - 6)(x - 1)(x + 1) = 0$

⑧ $x^4 - 14x^2 + 45 = 0$

⑨ $2p^4 - 27p^2 = -3p^3$

⑩ $s^2 - s = 0$

⑪ $3p^4 - 3p^2 = 10p^2$

⑫ $5x^2 - 2x = -1$

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Answers

① $6a^3 - 42a = -4a^2$

$\{0, \frac{7}{3}, -3\}$

② $p^2 - 2p + 17 = 0$

$\{1 + 4i, 1 - 4i\}$

③ $r^2 - 8r - 15 = 0$

$\{4 + \sqrt{31}, 4 - \sqrt{31}\}$

④ $(x^2 + 3)(x^2 - 2) = 0$

$\{\sqrt{3}i, -\sqrt{3}i, -\sqrt{2}, \sqrt{2}\}$

⑤ $4x^2 - 100 = 0$

$\{5, -5\}$

⑥ $x^2 - 25x + 24 = 0$

$\{24, 1\}$

⑦ $(x^2 - 6)(x - 1)(x + 1) = 0$

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

⑧ $x^4 - 14x^2 + 45 = 0$

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

⑨ $2p^4 - 27p^2 = -3p^3$

$\{0, 3, -\frac{9}{2}\}$

⑩ $s^2 - s = 0$

$\{1, 0\}$

⑪ $3p^4 - 3p^2 = 10p^2$

$\{\sqrt{\frac{13}{3}}, -\sqrt{\frac{13}{3}}\}$

⑫ $5x^2 - 2x = -1$

$\{\frac{1}{5} + i\frac{2}{5}, \frac{1}{5} - i\frac{2}{5}\}$