

Algebra II

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2) $\left\{ \frac{-3 \pm \sqrt{29}}{2} \right\}$	16) $\left\{ \frac{1 \pm 7i}{5} \right\}$	30) $\left\{ \frac{\sqrt{5} \pm 3}{2} \right\}$
4) $\{-3 \pm \sqrt{3}\}$	18) $\left\{ \frac{-7 \pm \sqrt{57}}{2} \right\}$	32) $\{-\sqrt{3} \pm \sqrt{6}\}$
6) $\left\{ 2, -\frac{1}{2} \right\}$	20) $\{-1.27, 2.77\}$	34) $\left\{ \frac{\sqrt{3} \pm i\sqrt{15}}{3} \right\}$
8) $\frac{-2 \pm i\sqrt{2}}{2}$ or $\frac{2 \pm i\sqrt{2}}{-2}$	22) $\{-1.47, 0.47\}$	36) $\{-i\}$
10) $\{-4 \pm \sqrt{17}\}$	24) $\{0.42, 3.58\}$	38) $\{i, 3+i\}$
12) $\left\{ \frac{-3 \pm \sqrt{19}}{4} \right\}$	26) $\{\pm 4\}$	40) $\left\{ -\frac{1}{3}i, i \right\}$
14) $\left\{ \frac{1 \pm \sqrt{2}}{2} \right\}$	28) $\left\{ -\frac{5}{2}, \frac{3}{2} \right\}$	

$$20) 2x^2 - 3x - 7 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-(-3) \pm \sqrt{(-3)^2 - 4(2)(-7)}}{2(2)}$$

$$\frac{3 \pm \sqrt{9 + 56}}{4} = \frac{3 \pm \sqrt{65}}{4}$$

$$3 + 65 \sqrt{\quad} \boxed{=} \boxed{\div} 4 \boxed{=}$$

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$$26) 3y^2 - 48 = 0 \quad \begin{array}{l} 3y^2 = 48 \\ \sqrt{y^2} \sqrt{16} \end{array}$$

$$a) 3(y^2 - 16) = 0 \quad y = \pm 4$$

$$3(y+4)(y-4) = 0$$

$$\{ \pm 4 \}$$

$$b) \frac{0 \pm \sqrt{0^2 - 4(3)(-48)}}{2(3)}$$

$$\frac{0 \pm \sqrt{576}}{6} = \frac{\pm 24}{6} = \pm 4$$

$$32) u^2 + 2u\sqrt{3} - 3 = 0$$

$$a=1 \quad b=2\sqrt{3} \quad c=-3$$

$$\frac{-2\sqrt{3} \pm \sqrt{(2\sqrt{3})^2 - 4(1)(-3)}}{2(1)}$$

$$\frac{-2\sqrt{3} \pm \sqrt{12+12}}{2}$$

$$\frac{-2\sqrt{3} \pm \sqrt{24}}{2} = \frac{-2\sqrt{3} \pm 2\sqrt{6}}{2}$$

$$\{-\sqrt{3} \pm \sqrt{6}\}$$

$$34) \sqrt{3}x^2 - 2x + 2\sqrt{3} = 0$$

$$\frac{2 \pm \sqrt{(-2)^2 - 4(\sqrt{3})(2\sqrt{3})}}{2\sqrt{3}}$$

$$\frac{2 \pm \sqrt{4-24}}{2\sqrt{3}} = \frac{2 \pm \sqrt{-20}}{2\sqrt{3}}$$

$$\frac{2 \pm 2i\sqrt{5}}{2\sqrt{3}} = \frac{(1 \pm i\sqrt{5})\sqrt{3}}{\sqrt{3} \cdot \sqrt{3}}$$

$$\left\{ \frac{\sqrt{3} \pm i\sqrt{15}}{3} \right\}$$

$$38) \quad iz^2 + (2-3i)z - (3+i) = 0$$

$$a=i \quad b=2-3i \quad c=-3-i$$

$$\frac{-(2-3i) \pm \sqrt{(2-3i)^2 - 4(i)(-3-i)}}{2(i)}$$

$$\frac{-2+3i \pm \sqrt{-5 - \cancel{12i} + \cancel{12i} + 4i^2}}{2i}$$

$$\frac{-2+3i \pm \sqrt{-9}}{2i} = \frac{-2+3i \pm 3i}{2i} = \frac{-2+6i}{2i} \text{ or } \frac{-2}{2i}$$

$$\frac{(-1+3i)i}{i \cdot i} = \frac{-i+3i^2}{-1} = \frac{-3-i}{-1} = 3+i \quad \{3+i, i\}$$

$$\begin{aligned} (2-3i)(2-3i) \\ 4-6i-6i+9i^2 \\ 4-12i-9 \\ -5-12i \end{aligned}$$

$$\frac{-1 \cdot i}{i \cdot i} = \frac{-i}{-1} = i$$