

## Algebra II

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2)	a) $\pm\sqrt{6}$ b) $-4 \pm \sqrt{6}$ c) $\frac{-4 \pm \sqrt{6}}{3}$	16)	$\{-4 \pm \sqrt{10}\}$	30)	$\{3 \pm 9i\}$
4)	a) $\{\pm 7\}$ c) $\{3, \frac{1}{5}\}$ b) $\{15, 13\}$	18)	$\{5 \pm i\sqrt{5}\}$	32)	$\{\frac{1}{7} \pm \frac{\sqrt{71}}{7}\}$
6)	a) $\pm i\sqrt{5}$ c) $\frac{3 \pm i\sqrt{5}}{5}$ b) $3 \pm i\sqrt{5}$	20)	$\{2 \pm 2i\}$	34)	$\{1 \pm \sqrt{2}\}$
8)	$\{3 \pm 2\sqrt{2}\}$	22)	$\{-2 \pm \frac{\sqrt{33}}{3}\}$	36)	$\{1\}$
10)	$\{24 + 10\sqrt{2}\}$	24)	$\{2 \pm \frac{\sqrt{22}}{2}\}$	38)	$\{0\}$
12)	$\{5 \pm 2i\sqrt{6}\}$	26)	$\{\frac{3}{2} \pm \frac{\sqrt{29}}{2}\}$		
14)	$\{2 \pm \sqrt{2}\}$	28)	$\{3 \pm \sqrt{13}\}$		

$$\begin{aligned}
 20) \quad t^2 + 8 &= 4t \\
 t^2 - 4t + 8 &= 0 \\
 (t^2 - 4t + 4) + 8 - 4 &= 0 \\
 -4, -2, (-2)^2 &= 4 \\
 \downarrow \\
 (t - 2)^2 + 4 &= 0 \\
 \sqrt{(t - 2)^2} &= \sqrt{-4} \\
 |t - 2| &= 2i \\
 t - 2 &= \pm 2i \\
 \{2 \pm 2i\}
 \end{aligned}$$

$$\begin{aligned}
 26) \quad y^2 - 3y - 5 &= 0 \quad \rightarrow \frac{-20}{4} - \frac{9}{4} \\
 (y^2 - 3y + \frac{9}{4}) - 5 - \frac{9}{4} &= 0 \\
 -3, -\frac{3}{2}, \frac{9}{4} \\
 \downarrow \\
 (y - \frac{3}{2})^2 - \frac{29}{4} &= 0 \\
 \sqrt{(y - \frac{3}{2})^2} &= \sqrt{\frac{29}{4}} \\
 |y - \frac{3}{2}| &= \frac{\sqrt{29}}{2} \\
 \left\{ \frac{3}{2} \pm \frac{\sqrt{29}}{2} \right\}
 \end{aligned}$$

$$28) \left(\frac{1}{2}x^2 - 3x = 2\right) \cdot 2$$

$$x^2 - 6x - 4 = 0$$

$$(x^2 - 6x + 9) - 4 - 9 = 0$$

$$-6, -3, 9$$

$$(x-3)^2 - 13 = 0$$

$$\sqrt{(x-3)^2} = \sqrt{13}$$

$$|x-3| = \sqrt{13}$$

$$\{3 \pm \sqrt{13}\}$$

$$6a) z^2 = -5$$

$$\sqrt{z^2} = \sqrt{-5}$$

$$|z| = i\sqrt{5}$$

$$\{\pm i\sqrt{5}\}$$

$$30) (0.1x^2 - 0.6x + 9 = 0) \cdot 10$$

$$x^2 - 6x + 90 = 0$$

$$(x^2 - 6x + 9) + 90 - 9 = 0$$

$$-6, -3, 9$$

$$(x-3)^2 + 81 = 0$$

$$\sqrt{(x-3)^2} = \sqrt{-81}$$

$$|x-3| = 9i$$

$$x-3 = \pm 9i$$

$$\{3 \pm 9i\}$$

$$36) \sqrt{x+3}^2 = (2x)^2 - \frac{3}{2}$$

$$x+3 = 4x^2$$

$$0 = 4x^2 - x - 3$$

$$0 = (4x+3)(x-1)$$

$$\cancel{\frac{3}{4}}, 1$$

$$\{1\}$$