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Solving sq. root method

$$1. \quad x^2 + 4 = 0$$

$$\quad \quad \quad -4 \quad -4$$

$$\quad \quad \quad \sqrt{x^2 = -4}$$

$$\quad \quad \quad x = \pm 2i$$

$2^2 = 4$
 $(-2)^2 = 4$

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②

$$\frac{1}{2}x^2 + 3 = -\frac{1}{3}$$

$$\frac{1}{2}x^2 = -\frac{1}{3} - 3$$

$$\frac{1}{2}x^2 = -\frac{10}{3} \quad (2)$$

$$x^2 = -\frac{20}{3}$$

$$x = \pm \sqrt{-\frac{20}{3}}$$

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③

$$2(x^2 - 5) = -x^2 - 1$$

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

$$3x^2 = 9$$

$$\sqrt{x^2 = 3}$$

$$x = \pm \sqrt{3}$$

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④

$$\frac{1}{3}(x+4)^2 - 1 = 5$$

$$\frac{1}{3}(x+4)^2 = 6$$

$$\sqrt{(x+4)^2 = 18}$$

$$x+4 = \pm 3\sqrt{2}$$

$$x = \pm 3\sqrt{2} - 4$$

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①

$$\frac{-3}{5}x^2 + 2 = -\frac{1}{5}$$

$$\frac{-3}{5}x^2 = -\frac{1}{5} - 2$$

$$\frac{-3}{5}x^2 = -\frac{11}{5}$$

$$x^2 = \frac{11}{3}$$

$$x = \pm \sqrt{\frac{11}{3}}$$

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$$\begin{aligned} \textcircled{8} \quad & \frac{1}{7}x^2 - 3 = 4 \\ & \frac{1}{7}x^2 - 3 + 3 = 4 + 3 \\ & \Leftrightarrow \frac{1}{7}x^2 = 7 \quad (\cdot 7) \\ & \sqrt{\frac{1}{7}x^2} = \sqrt{49} \\ & x = \pm 7 \end{aligned}$$

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