

$$x^2 - 4x + 1 = 0 \xrightarrow{+1} x^2 - 4x + 4 = 1 \Rightarrow (x-2)^2 = 1 \rightarrow x = 2 \pm 1$$

(5)

$$x^2 + 11x + 1 = 0 \xrightarrow{+9} x^2 + 11x + 9 = 9 \rightarrow (x+5)^2 = 9 \rightarrow x = -5 \pm 3$$

$$x^2 - 5x + 4 = 0 \rightarrow (x-1)(x-4) = 0 \rightarrow x \in \{1, 4\}$$

(5)

$$x^2 - 5x - 14 = 0 \rightarrow (x-7)(x+2) = 0 \rightarrow x \in \{7, -2\}$$

$$x^2 - 3x - 5 = 0 \rightarrow \frac{3 \pm \sqrt{9+20}}{2} = x \in \left\{ \frac{3+\sqrt{29}}{2}, \frac{3-\sqrt{29}}{2} \right\}$$

(5)

$$2x^2 - 4x + \frac{1}{2} = 0 \rightarrow \frac{4 \pm \sqrt{16-2}}{4} = x \in \left\{ \frac{4+\sqrt{14}}{4}, \frac{4-\sqrt{14}}{4} \right\}$$

$$x^2 - 3x + 2 = 0 \rightarrow \frac{3 \pm \sqrt{9-4}}{2} = x \in \{1, 2\}$$

(5)

$$4x^2 + x - 3 = 0 \rightarrow \frac{-1 \pm \sqrt{1+48}}{8} = \frac{-1 \pm 7}{8} = x \in \left\{ \frac{-1+7}{8}, \frac{-1-7}{8} \right\}$$

$$5x^2 - 12x + 7 = 0 \rightarrow x^2 - 12x + 35 = (x-5)(x-7) = x \in \{5, 7\}$$

(5)

$$3x^2 - 10x + 7 = 0 \rightarrow x^2 - 10x + 21 = (x-3)(x-7) = x \in \{3, 7\}$$

$$\text{الف) } \frac{-5 \pm \sqrt{13}}{-4}$$

$$\text{ب) } \frac{1 \pm \sqrt{1-14}}{1}$$

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$$\text{ج) } \frac{4 \pm \sqrt{14-14}}{1} = \mathcal{R}\{1\}$$

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$$\text{د) } \frac{1 \pm \sqrt{1-1}}{1} = \mathcal{R}\{1\}$$

$$\text{الف) } \alpha = 1 \rightarrow \frac{3 \pm \sqrt{9-1-1}}{1} = \mathcal{R}\left\{\frac{1}{2}\right\} \quad \text{ب) } \Delta = 9 - 1\alpha \rightarrow \alpha = \frac{9}{1}$$

$\alpha = \{1, 0, -1, \dots\}$

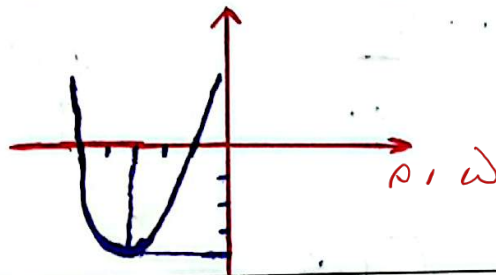
$$\alpha = \{2, 3, 4, \dots\}$$

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$$\text{ج) } \alpha = \frac{3 \pm \sqrt{9-14}}{1}$$

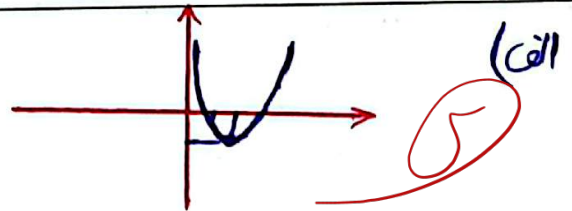
$$\text{د) } \alpha = -2 \quad \frac{3 \pm \sqrt{9+14}}{1}$$

$$\frac{\Delta}{-4a} / \frac{-b}{2a} \quad \text{min} \quad \begin{bmatrix} -3 \\ -4 \end{bmatrix}$$



$$\begin{bmatrix} 2 \\ 1 \end{bmatrix} \quad \frac{-b}{-2} = 2 \quad \frac{c}{1} = 1$$

$x_{\text{ext}} = \frac{-b}{2a} = 2$



$$\mathcal{R}\left\{\frac{-1}{-2}\right\} = \frac{-1 \pm \sqrt{14-12}}{2}$$

$$\begin{bmatrix} -1 \\ 0 \end{bmatrix} \quad \begin{bmatrix} -3 \\ 0 \end{bmatrix}$$

$$(x + \sqrt{14}) + (x - \sqrt{14}) = 2x = 13 \rightarrow x = \frac{13}{2}$$

$$(x + \sqrt{14})(x - \sqrt{14}) = 9 - 14 = -5 \rightarrow x = \frac{1}{2}$$

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$$\frac{1}{2}$$

$$\frac{13}{2}$$

سوال ۷

$$\text{الف) } (-3)^2 - 4(2)(a) > 0 \rightarrow 9 - 8a > 0$$

$$\text{ج.) } (-3)^2 - 4(2)(a) < 0 \rightarrow 9 - 8a < 0$$

$$\text{د) } (-3)^2 - 4(2)(a) > 0 \rightarrow 9 - 8a > 0$$