

الف) $x^2 - 4x - 6 = 0 \rightarrow x^2 - 4x + 4 = 0 \rightarrow (x-2)^2 = 0 \rightarrow x = 2$ ~~$x = \frac{4}{2}$~~ ~~$x = \frac{2}{1}$~~

ب) $2x^2 - 11x + 5 = 0 \rightarrow x^2 - 11x + 5 = 0 \rightarrow (x-9)(x+1) \rightarrow (x-\frac{9}{1})(x+1) = (x-5)(x+1) \rightarrow x = 5$ ~~$x = \frac{11}{2}$~~ ~~$x = \frac{5}{1}$~~

ج) $3x^2 - 4x - 3 = 0 \rightarrow x^2 - 4x - 12 = 0 \rightarrow (x-6)(x+2) \rightarrow (x-\frac{6}{1})(x+2) \rightarrow x = 6$ ~~$x = \frac{4}{3}$~~ ~~$x = -\frac{1}{2}$~~

د) $2x^2 - 4x - 12 = 0 \rightarrow x^2 - 4x - 6 = 0 \rightarrow (x-6)(x+2) \rightarrow (x-4)(x+3) \rightarrow x = 4$ ~~$x = \frac{4}{2}$~~ ~~$x = \frac{3}{1}$~~

الف) $x^2 - 4x - 12 = (x-6)(x+2) \rightarrow x = 6$ ~~$x = 7$~~ ~~$x = -2$~~

ب) $2x^2 + 4x + 3 = 0$ $a+c=b \rightarrow -1-3 = -4$ ~~$x = -1$~~ ~~$x = -3$~~

ج) $x^2 + 3x + 2 = 0$ $\Delta = 9 - 4 = 5 \rightarrow$ جواب ندارد

د) $3x^2 + 3x - 2 = 0$ $\Delta = 9 + 24 = 33 \rightarrow x = \frac{-3 \pm \sqrt{33}}{4}$

$A \times B - B^T = ?$ و $B^T = B \times B$

$A+B = \{1,2\} \{1,2\} \{2,2\} \{2,2\} \{2,2\}$ $A+B-B^T = \{1,2\} \{1,2\}$

$B^T = \{2,2\} \{2,2\} \{2,2\} \{2,2\}$

$m^2 = m + 2 \rightarrow m^2 - m - 2 = 0$ ~~$m = 2$~~ ~~$m = -1$~~ ~~$m = 2$~~ ~~$m = -1$~~

$m^2 = m + 2 \rightarrow m = 2$ ~~$m = 1$~~ ~~$m = -1$~~ ~~$m = 2$~~ ~~$m = -1$~~

$a^2 = 3a - 2 \rightarrow a^2 - 3a + 2 = 0 \rightarrow a = 2$ ~~$a = 1$~~

$a = 1 \rightarrow \{1,1\} \{1,1\} \{1,1\}$ ~~$a = 2$~~

$a = 2 \rightarrow \{2,2\} \{2,2\} \{2,2\}$ ~~$a = 1$~~

$$x=1 \rightarrow 1-1=0=a(1)+b \rightarrow a+b=0$$

$$x=2 \rightarrow 2^2=2a+b \rightarrow 1=2a+b$$

$$a=+1, b=-1$$

$$a+b=-64$$

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$$x=K \rightarrow 2K-3=f-3K$$

با یک عدد معادله به ازای K برابر باشد

$$\rightarrow \Delta K=V \rightarrow K=\frac{V}{\Delta} = K$$

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الف) $y^2 - 4y = x^2 - 6x + 3 \xrightarrow{x=1} y^2 - 4y = 1 - 6 + 3 = 0 \rightarrow y(y-4) = 0 \xrightarrow{y=0, y=4} x$ نیست

ب) $|x| + |y| = 3 \xrightarrow{x=0} |y| = 3 \rightarrow y = \pm 3 \rightarrow x$ تابع نیست

ج) $\sqrt{1-\cos x} = |y| \quad \cos x = \frac{1}{2} \rightarrow |y| = \sqrt{\frac{1}{2}} \rightarrow y = \pm \sqrt{\frac{1}{2}} \quad x$ نیست

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د) $y^2 + x^2 + 2x + 1 = 0 \rightarrow y^2 + (x^2 + 2x + 1) = y^2 + (x+1)^2 = 0 \rightarrow$ فقط برای $x=-1, y=0$ دارد

الف) $\sqrt{y} + x^2 = 2x - 2 \rightarrow \sqrt{y} = -x^2 + 2x - 2 = -(x-1)^2 - 1$

$\begin{cases} \sqrt{y_1} = -(x+1)^2 - 1 \\ \sqrt{y_2} = -(x-1)^2 - 1 \end{cases} \rightarrow \sqrt{y_1} = \sqrt{y_2} \rightarrow y_1 = y_2 \rightarrow x$ است ✓

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ب) $y^2 + 2y = 0 \rightarrow y_1^2 + 2y_1 = 0$ و $y_2^2 + 2y_2 = 0 \rightarrow y_1^2 + 2y_1 = y_2^2 + 2y_2 \rightarrow y_1^2 - y_2^2 + 2y_1 - 2y_2 = 0$
 $\rightarrow (y_1 - y_2)(y_1 + y_2 + 2) = 0 \rightarrow y_1 - y_2 = 0 \rightarrow y_1 = y_2 \rightarrow x$ تابع است ✓

الف) $x \sin y = y \sin x \rightarrow \text{IF } x=0 \rightarrow \sin x=0 \rightarrow y=R$ تابع نیست

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ب) $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \xrightarrow{s=\frac{x}{y}} \frac{x}{y} = s \rightarrow \sqrt{s} + \sqrt{\frac{1}{s}} = 2 \rightarrow s + \frac{1}{s} + 2\sqrt{s} = 4 \rightarrow s + \frac{1}{s} = 2$
 $\xrightarrow{\frac{x}{y}=1 \sim x=y (x,y \neq 0)} s=1 \rightarrow \frac{1}{s}=1 \rightarrow x=y \rightarrow x \neq y \rightarrow x$ تابع است ✓

$$(10-ب) \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$$

ہیں عبارت تہا زمانی ہر قرابت کہ $\sqrt{\frac{x}{y}} = 1$ بالذہب

$$\sqrt{\frac{x}{y}} = 1 \leadsto \frac{x}{y} = 1 \leadsto x = y \text{ و } (x, y \neq 0)$$

