

19, 25 آفرین

1. در این بخش به شما داده شده است که

الف) $x^2 - 2x - 4 = 0 \Rightarrow (x-4)(x+1) = 0 \Rightarrow \begin{cases} x = 4 \\ x = -1 \end{cases}$

ب) $x^2 - 11x - 9 = 0 \Rightarrow (x-9)(x+1) = 0 \Rightarrow \begin{cases} x = 9 \\ x = -1 \end{cases}$

ج) $x^2 - 6x - 12 = 0 \Rightarrow (x-4)(x+2) = 0 \Rightarrow \begin{cases} x = 4 \\ x = -2 \end{cases}$

د) $x^2 - 2x - 4 = 0 \Rightarrow (x-1)(x+2) = 0 \Rightarrow \begin{cases} x = 1 \\ x = -2 \end{cases}$

ه) $x^2 - 2x - 1 = 0 \Rightarrow (x-1)(x+1) = 0 \Rightarrow \begin{cases} x = 1 \\ x = -1 \end{cases}$

و) $2x^2 + 2x + 1 = 0 \Rightarrow 2x^2 + 2x + 1 = 0 \Rightarrow (x+1)(x+1) = 0 \Rightarrow \begin{cases} x = -1 \\ x = -1 \end{cases}$

ز) $x^2 + 2x + 3 = 0 \Rightarrow (x+1)(x+3) = 0 \Rightarrow \begin{cases} x = -1 \\ x = -3 \end{cases}$

ح) $x^2 + 2x - 1 = 0 \Rightarrow \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \Rightarrow x = \frac{-2 \pm \sqrt{4 + 4}}{2} \Rightarrow \begin{cases} x = -1 + \sqrt{2} \\ x = -1 - \sqrt{2} \end{cases}$

ا) $A \cup B = \{(1,2), (1,3), (2,2), (2,3), (3,2), (3,3)\}$

ب) $B^c = \{(2,2), (2,3), (3,2), (3,3)\}$

$A \cup B - B^c = \{(1,2), (1,3)\}$

ج) $m^2 + m - 2 = 0 \Rightarrow m^2 + m - 2 = 0 \Rightarrow \begin{cases} m = 1 \\ m = -2 \end{cases}$

د) $m^2 + m - 2 = 0 \Rightarrow m^2 + m - 2 = 0 \Rightarrow \begin{cases} m = 1 \\ m = -2 \end{cases}$

$$a^T (a - \lambda I) \Rightarrow a^T - \lambda a^T \Rightarrow \begin{cases} a^T \rightarrow 000 \rightarrow \{(1,1), (1,0), (1,0)\} \\ a^T \end{cases}$$

$$a \cdot b = 0 \Rightarrow a \perp b \Rightarrow 0 = a \cdot b$$

$$a \cdot b = 1 \Rightarrow a \perp b$$

$$\begin{matrix} a \cdot a \\ b \cdot a \end{matrix} \left\{ \begin{matrix} a, b \end{matrix} \right\}$$

$$u \cdot v = 0 \Rightarrow u \perp v \Rightarrow \{u, v\} \Rightarrow \{u, v\} \Rightarrow \{u, v\}$$

$$u \cdot v = 0 \Rightarrow u \perp v \Rightarrow \{u, v\} \Rightarrow \{u, v\} \Rightarrow \{u, v\}$$

$$1) |y| = 1 - |x| \xrightarrow{x=1} |y| = 0 \Rightarrow y = 0 \Rightarrow \text{تابع}$$

$$2) |y| = \sqrt{1 - \cos x} \xrightarrow{x=\pi} |y| = 1 \Rightarrow y = \pm 1 \Rightarrow \text{تابع}$$

$$3) y' = -(x+1)^2 \rightarrow \begin{matrix} 1 \\ 0 \end{matrix} \left\{ \begin{matrix} \text{تابع} \end{matrix} \right\}$$

$$u \cdot v = -x^2 + 2x - 1 \xrightarrow{x_1=x_2} \sqrt{y_1} = \sqrt{y_2} \xrightarrow{\text{تابع}} y_1 = y_2 \Rightarrow \text{تابع}$$

$$1) y'' + 2y = 0 \xrightarrow{x_1=x_2} y_1'' + 2y_1 = y_2'' + 2y_2$$

$$\rightarrow y_1'' - y_2'' = (y_2 - y_1)' \Rightarrow (y_1 - y_2)(y_1' + y_2' + y_1 y_2) - 2(y_2 - y_1) = 0$$

$$\Rightarrow (y_1 - y_2)(y_1^2 + y_2^2 + y_1 y_2 + 2) = 0 \rightarrow \Delta \rightarrow y_1^2 - 4y_2^2 = 1$$

Ans) $x=0 \rightarrow (0) \sin y = y (\sin(0)) \rightarrow y = \frac{\pi}{2}$
 $y = \frac{\pi}{4}$
 $y = \pi$

$\rightarrow$ ~~Correct~~

1) $\frac{x^2 + y^2}{x^2 + y^2} = 1 \Rightarrow x^2 + y^2 = 1 \xrightarrow{\times xy} x^3 + y^3 = xy \Rightarrow (x-y)^3 = 0$

! or $x=y$ ($x, y \neq 0$)

$\Rightarrow x=y$
 $x_1 = y_1$
 $y_1 = y_2$

$$\text{ب-۲)} \quad 2x^2 + 5x + 3 = 0 \xrightarrow{a+c=b} \rightarrow x_1 = -1$$

$$\rightarrow x_2 = \frac{-c}{a} = -\frac{3}{2}$$

$$\text{ج-۲)} \quad x^2 + 2x + 3 = 0 \xrightarrow{\text{روش دلتا}} \Delta = (2)^2 - 4(1)(3) = -8 < 0$$

معادله ریشه حقیقی ندارد!

$$\text{ب-۱۰)} \quad \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$$

این عبارت تنها زمانی به‌قدر است که $\sqrt{\frac{x}{y}} = 1$ باشد پس

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

