

الف) $\rightarrow 4x^2 - 5x - 9 = 0 \rightarrow x^2 - 5x - 9 = 0 \rightarrow (x-9)(x+1)$ $x_1 = -\frac{9}{4}, x_2 = \frac{9}{4}$

ب) $\rightarrow 3x^2 - 11x - 4 = 0 \rightarrow x^2 - 11x - 4 = 0 \rightarrow (x-9)(x+1)$ $x_1 = -\frac{1}{3}, x_2 = \frac{9}{3}$

ج) $\rightarrow 4x^2 - 5x - 9 = 0 \rightarrow x^2 - 5x - 9 = 0 \rightarrow (x-4)(x+1)$ $x_1 = -\frac{1}{4}, x_2 = \frac{4}{1}$

د) $\rightarrow 2x^2 - 5x - 12 = 0 \rightarrow x^2 - 5x - 12 = 0 \rightarrow (x-1)(x+3)$ $x_1 = -\frac{1}{2}, x_2 = \frac{1}{2} = 2$

الف) $(x-7)(x+2) = 0 \rightarrow x_1 = 7, x_2 = -2$

ب) $2x^2 + 5x + 2 = 0 \rightarrow x^2 + 5x + 4 = 0 \rightarrow (x+2)(x+3)$ $x_1 = -\frac{2}{2}, x_2 = -\frac{3}{2} = -1$

ج) $\Delta = (2)^2 - 4(3)(1) = -1 \rightarrow \Delta < 0 \rightarrow$ $\frac{n}{\text{عدد}}$

د) $\rightarrow \Delta = 9 - 4(3)(3) = -24$ $x_1 = -\frac{3+\sqrt{24}}{4}, x_2 = -\frac{3-\sqrt{24}}{4}$

$B^T = B \times B \rightarrow (2,2), (2,3), (3,2), (3,3)$

$A \times B = (1,2), (1,3), (2,2), (2,3), (3,2), (3,3)$

$\rightarrow A \times B - B^T = (1,2), (1,3), (2,2), (2,3), (3,2), (3,3) \rightarrow (1,2), (1,3)$

الف) $m+2=m^2 \rightarrow m^2-m-2=0 \rightarrow (m-2)(m+1)$ $\frac{1}{(m-2)(m+1)}$

if $m=2 \rightarrow (2,2) = (2,1) \rightarrow m \neq 2, m=-1$

$(2,1) = (2,2) \rightarrow m \neq 2, m=-1$

ب) $m^2 \rightarrow m^2-m-2=0 \rightarrow (m-2)(m+1)$ $\frac{1}{(m-2)(m+1)}$

$a^2 = 3a-2 \rightarrow a^2-3a+2=0 \rightarrow (a-1)(a-2)$ $\frac{1}{(a-1)(a-2)}$

if $\rightarrow a=1 \rightarrow 3a+2=5 \rightarrow 5 \neq 4 \rightarrow a=2$

$$x^2-1 \rightarrow x=1 \rightarrow 0 \rightarrow a+b=0 \\ \rightarrow x=2 \rightarrow 2a+b=1 \quad \left\{ \begin{array}{l} -2a+b \\ (a+b) \\ \hline a=1 \rightarrow b=-1 \rightarrow a \times b = -1 \end{array} \right.$$

-4

$$x=k \rightarrow 2k-3 = 4-3k$$

-7

$$\omega k = v \rightarrow k = \frac{v}{\omega}$$

$$\text{الف)} \quad x=1 \rightarrow y^3-4y=0 \xrightarrow{y=0} y^3=4y \rightarrow y^2=4 \rightarrow y=\pm 2 \quad \text{تابع نیست}$$

-1

$$\text{ب)} \quad x=0 \rightarrow y=\pm 3 \rightarrow \quad \text{تابع نیست}$$

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

$$\text{د)} \quad \text{تابع است}$$

$$\text{الف)} \quad \sqrt[3]{y} + x^2 = 2x-2 \rightarrow \sqrt[3]{y} = -x^2+2x-2 \rightarrow y = (-x^2+2x-2)^3 \rightarrow \text{تابع است}$$

-9

$$\text{ب)} \quad f(y) = y^3+2y \rightarrow \text{تابع است} \quad \text{تابع فردی است} \quad \text{در 1، 2، 3، ... و 0 هم}$$

$$\text{الف)} \quad x=\pi \rightarrow \sin \pi = 0 \rightarrow \pi \sin y = 0 \rightarrow \sin y = 0 \quad \text{تابع نیست} \\ y=0, \pi, 2\pi, 3\pi, \dots$$

-1.

$$\text{ب)} \quad \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \rightarrow a = \sqrt{\frac{x}{y}} \rightarrow \sqrt{\frac{y}{x}} = \frac{1}{a} \quad \text{تابع است}$$

$$a + \frac{1}{a} = 2 \xrightarrow{\times a} a^2 + 1 = 2a \quad a^2 - 2a + 1 = 0 \rightarrow (a-1)^2 = 0 \rightarrow a = 1 \quad \sqrt{\frac{x}{y}} = 1 \rightarrow x=y$$