

الف) $x^2 - 5x - 14$ $x = +\frac{9}{4}, -\frac{5}{4} \rightarrow x = +\frac{5}{4}, -\frac{9}{4}$

$$b) \quad \lambda^2 - \lambda - 9 = 0 \quad \lambda = -\frac{1}{4}, \frac{9}{4} \Rightarrow \lambda = -\frac{1}{4}, \frac{9}{4}$$

$$c) \lambda^2 - 17\lambda - 12 = 0 \quad \lambda = \frac{17}{2}, -\frac{1}{2}$$

$$\Rightarrow \lambda^2 - \omega \lambda - r\varepsilon = 0 \quad \lambda = \frac{\omega}{2}, -\frac{r}{2} \rightarrow \lambda = \varepsilon, -\frac{r}{\varepsilon}$$

$$\text{الف) } (x+2)(x-5)=0 \Rightarrow x=5, -2$$

ب) $x^2 + 5x + 4 = 0 \Rightarrow (x+1)(x+4) = 0 \Rightarrow x = -\frac{4}{1}, -\frac{1}{1} \Rightarrow x = -4, -1$

ج) $\Delta = 4 - 12 = -8 < 0$ ریشه ندارد!

$$5) \Delta = 9 + 12 = 21 \quad \frac{-3 \pm \sqrt{21}}{4} \Rightarrow x = \frac{-3 + \sqrt{21}}{4}, \frac{-3 - \sqrt{21}}{4}$$

$$A \times B = \{1, 1\}, \{1, 2\}, \{2, 1\}, \{2, 2\}$$

$$B' = \cancel{\{r, r\}}, \cancel{\{r, r\}}, \cancel{\{r, r\}}, \cancel{\{r, r\}}$$

$$A \times B - B^r = \{1, 2\}, \{1, 3\}$$

الف) $m+r = m^r \rightarrow m^r - m - r = 0 \Rightarrow (m+1)(m-r) = 0 \Rightarrow m = \frac{r, -1}{\frac{\partial \mathcal{L}}{\partial m}}$
 $(r, 1), (r, r) \propto$

ب) $m^2 = m + 2 \rightarrow m^2 - m + 2 = 0 \rightarrow m = \frac{1 \pm \sqrt{1 - 8}}{2}$ در صورت تابع نیست!

$(-1, 4) \quad (-1, 3) \propto \quad (2, 1) \quad (2, 4) \propto$

$$a^r = ka - r$$

$$a^r - ka + r = 0 \quad (a-1)(a-r) = 0 \quad a = +r, +1$$

$$(1, \omega)(1, 1) \propto (1, \varepsilon)(\varepsilon, 1) \checkmark$$

$$\begin{aligned} - \begin{cases} 2a + b = 1 \\ a + b = 0 \end{cases} \\ a = 1 \end{aligned}$$

$$\begin{aligned} 14 + b = 1 \\ b = -13 \end{aligned}$$

$$a \times b = 1 \times -13 = -13$$

6

$$\begin{aligned} 2x - 3 &= 7 - 3x \\ 5x &= 10 \\ x &= 2 \end{aligned}$$

$$2 \times \frac{1}{5} = \frac{14}{5} - \frac{13}{5} = \frac{1}{5}$$

$$3x \times \frac{1}{5} = \frac{11}{5} \Rightarrow \frac{3x}{5} - \frac{11}{5} = \frac{1}{5}$$

7

الف) $x=1$ $y(y^2-4) = 1-4+3 = 0$ $y \neq 0 \Rightarrow y^2-4=0$ $y^2=4 \Rightarrow y = \pm 2$ تابع نیست!

ب) $x=0$ $|y|=3 \Rightarrow y = \pm 3$ تابع نیست!

ج) $-K \cos K$ $x=9$ $|y|=1$ $y = \pm 1$ تابع نیست!

د) $x=0 \rightarrow y^2+1=0$ $y^2=-1$ تابع نیست!

8

الف) $x_1=x_2 \rightarrow \sqrt[3]{y_1} + x_1^2 = 2x_1 - 2$ $\sqrt[3]{y_2} + x_2^2 = 2x_2 - 2$ $\sqrt[3]{y_1} + x_1^2 = \sqrt[3]{y_2} + x_2^2 \Rightarrow \sqrt[3]{y_1} = \sqrt[3]{y_2} \Rightarrow y_1 = y_2$ تابع است!

ب) $x_1=x_2 \rightarrow y_1^2 + 2y_1 = y_2^2 + 2y_2 \Rightarrow y_1^2 - y_2^2 + 2y_1 - 2y_2 = 0$
 $\Rightarrow (y_1 - y_2)(y_1 + y_2 + 2) = 0$ $y_1 = y_2 \Rightarrow y_1^2 + y_1 y_2 + y_2^2 \geq 0$
 $y_1^2 + y_1 y_2 + y_2^2 + 2 > 0 \rightarrow$ همیشه دارد
 این عبارت تابع است.

9

الف) $180 = x$ $0 = 180 \times \sin y \rightarrow \sin y = 0 \rightarrow y = 0^\circ$ $y = 180^\circ$ تابع نیست!

ب) $x=0$ $\sqrt{\frac{y}{y}} = 0$ $\sqrt{\frac{y}{y}} = 1$ $0 + 1 = 1$ تابع نیست!

10