

الف) $x^2 - 5x - 24 = 0$

$(x - 9)(x + 4) = 0$

$x = 9 \quad x = -4 \Rightarrow x = \frac{9}{1} = \frac{9}{1}, \quad x = \frac{-4}{1} = -\frac{4}{1}$

ب) $x^2 - 11x + 9 = 0 \quad (x + 1)(x - 9) = 0$

$x = 9 \quad x = -1$

$x = \frac{9}{1} = 9 \quad x = \frac{-1}{1} = -1$

ج) $x^2 - 3x - 12 = 0 \quad (x + 2)(x - 9) = 0$

$x = 9 \Rightarrow x = \frac{9}{1} = 9$

$x = -2 \Rightarrow x = \frac{-2}{1} = -2$

د) $x^2 - 5x - 24 = 0$

$(x + 4)(x - 1) = 0 \quad x = 1 \Rightarrow x = \frac{1}{1} = 1$

$x = -4 \Rightarrow x = \frac{-4}{1} = -4$

ه) $(x + 2)(x - 7) = 0 \Rightarrow x = 7$

$x = -2$

(12)

و) $x^2 + 13x + 4 = 0 \Rightarrow (x + 2)(x + 4) = 0$

$x = -\frac{4}{1}$

$x = -\frac{2}{1} = -2$

ز) $\Delta = b^2 - 4ac \Rightarrow 16 - 4(1)(1) \Rightarrow 16 - 4 = 12 > 0$

ح) $\Delta = b^2 - 4ac \quad 9 - 4(-2)(1)$

$9 + 8 = 17$

$\Rightarrow \frac{-1 \pm \sqrt{17}}{2} \Rightarrow \frac{-1 \pm \sqrt{17}}{2}$

$$A \times B = \{ (1,2) (1,3) (2,2) (2,3) (3,2) (3,3) \} \quad 13$$

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

$$A \times B - B^2 \Rightarrow \{ (1,2) (1,3) \}$$

الف) $m^2 = m + 2 \quad 14$

$$m^2 - m - 2 = 0$$

$$(m-2)(m+1) \Rightarrow \begin{matrix} m=2 \times \\ m=-1 \checkmark \end{matrix}$$

$$(2,1) (2,1) (-2,-1) (-2,-1) (2,1) (-1,2)$$

ب) $m^2 = m + 2$

$$m^2 - m - 2 = 0$$

$$(m-2)(m+1) \Rightarrow \begin{matrix} m=2 \checkmark \\ m=-1 \times \end{matrix}$$

$$a^2 = 3a - 2 \quad 15$$

$$a^2 - 3a + 2 = 0$$

$$(a-2)(a-1) \Rightarrow \begin{matrix} a=2 \checkmark \\ a=1 \times \end{matrix}$$

$$n=1 \rightarrow \begin{matrix} n^2-1 = a+n+b \\ 0 = a+b \end{matrix} \Rightarrow \begin{matrix} -a-b=0 \\ a+b=0 \end{matrix} \Rightarrow \boxed{a=1} \quad 16$$

$$n=2 \rightarrow \begin{matrix} 1 = 2a+b \\ a+b=0 \\ 1+b=0 \end{matrix} \Rightarrow \begin{matrix} a=1 \\ b=-1 \end{matrix} \quad ab = 1 \times -1 = -9f$$

$$2K - 3 = 4 - 3K$$

(۷)

$$-V = -2K - 2K$$

$$V = 4K$$

$$\frac{V}{4} = \frac{4K}{4} \Rightarrow K = \frac{V}{4}$$

$$n = 0 \Rightarrow \text{شالفتی (الف)}$$

$$y^3 - 4y = 3$$

$$y(y^2 - 4) = 3$$

در این توان گفت بین
y با توان فرد آخر
علاقت حتما باشد
تابع نیست

(۸)

$$n = 0$$

$$|n| = 3$$

$$y = \pm 3$$

تابع

ج)

~~$$\cos n = -1$$~~

$$y = \pm \sqrt{1 - \cos n}$$

اما جواب میدهد چون

$$(n+1)^2 + y^2 = 0$$

$$y = 0$$

$$n+1 = 0$$

$$n = -1$$

هر دو مثبت پس طرف با ۰
صفر باشند

$$\sqrt[3]{y_1} + y_1^3 = \sqrt[3]{y_2} + y_2^3$$

(۹)

$$\sqrt[3]{y_1} = \sqrt[3]{y_2} \xrightarrow{\text{توان ۳}} y_1 = y_2 \quad \text{تابع}$$

$$y_1^3 + y_1^2 = y_2^3 + y_2^2$$

$$y_1^3 = y_2^3 \xrightarrow{\text{توان ۳}} y_1 = y_2$$

$$\sqrt[3]{y_1^3} = \sqrt[3]{y_2^3} \Rightarrow |y_1| = |y_2| \Rightarrow y_1 = y_2$$

$$\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$$

(الف) $x=0$

١٠

هر صير

من تونه باشه

تابع X

$$\sqrt{\frac{x}{y}} = t$$

$$\sqrt{\frac{y}{x}} = \frac{1}{t}$$

$$\left\{ \begin{array}{l} t + \frac{1}{t} = 2 \end{array} \right.$$

$$t^2 + 1 = 2t$$

$$t^2 - 2t + 1 = 0$$

$$(t-1)^2 = 0$$

$$t = 1$$

$$\sqrt{\frac{x}{y}} = 1$$

$$\frac{x}{y} = 1 \Rightarrow x = y \quad \checkmark \text{ تابع}$$

$$x = y \neq 0$$

ب