

$$1) \quad x^2 - 5x - 6 = 0 \quad \text{الف)}$$

$$x^2 - 5x - 6 \Rightarrow (x-6)(x+1)$$

$$x = \frac{6}{1} \quad x = -\frac{1}{1}$$

$$2) \quad 3x^2 - 11x - 2 = 0 \quad x^2 - 11x - 9 = 0$$

$$(x-9)(x+1) = 0 \quad x = 9 \quad x = -1$$

$$3) \quad x^2 - 5x - 2 = 0 \Rightarrow x^2 - 5x - 12 = 0$$

$$(x-7)(x+2) = 0 \quad x = \frac{7}{1} \quad x = -\frac{2}{1}$$

$$4) \quad 4x^2 - 5x - 12 = 0 \Rightarrow x^2 - 5x - 12 = 0$$

$$(x-1)(x+3) = 0 \quad x = 1 \quad x = -3$$

$$5) \quad x^2 - 5x - 12 = 0 \Rightarrow (x-7)(x+2) = 0$$

$$x = 7 \quad x = -2$$

$$6) \quad 4x^2 + 5x + 3 = 0 \quad a+c=b \quad a=-1$$

$$x = -\frac{3}{1}$$

$$b^2 - 4ac$$

$$7) \quad x^2 + 2x + 3 = 0 \quad \Delta < 0 \quad 4 - 12 < 0 \quad \text{ریشه ندارد}$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-2 \pm \sqrt{12}}{2}$$

$$8) \quad 3x^2 + 3x - 2 = 0 \quad \Delta = b^2 - 4ac \Rightarrow 9 + 12 = 21$$

$$A = \{1, 2, 3\} \quad B = \{2, 3\} \quad - ۲$$

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

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

$$(A \times B) - B^2 = \{(1, 2), (1, 3)\} \quad \text{یادت نده!}$$

$$f(n) = \{(2, m^2), (2, 1), (-2, m), (2, m), (2, m+2), (m+2)\}$$

$$m^2 = m+2 \Rightarrow m^2 - m - 2 = 0 \Rightarrow a+c=b$$

$$m = c = 2$$

$$x \in m=1 \Rightarrow \{(2, 4), (2, 1), (-2, 2), (-2, 3), (2, 4), (2, 1)\}$$

$$m = -1 \Rightarrow \{(2, 1), (2, 1), (-2, -1), (-2, -1), (2, 1), (2, 1)\}$$

لے یہ جایی سوا شیبہ نوستر :-

$$(2, 4), (3, m^2), (3, m+2) \rightarrow m^2 = m+2 \rightarrow m^2 - m - 2 = 0$$

$$m = 2 \rightarrow (2, 1), (2, 4) \times$$

$$m = -1 \rightarrow (-1, 4), (-1, 3) \times$$

به ازای هیچ مقدار m عبارت نابینیت!

$$f(n) = \{(1, a^r), (1, r(a-r)) (a^r, r(a+r))\} - 6$$

$$a^r = r(a-r) \Rightarrow a^r = r(a-r) \Rightarrow a + b + c = 0$$

$$a = 100\epsilon \quad a = \frac{c}{a} = r$$

$$a = 1 \{ (b) (1, 1) (b, a) \} \quad a = r \{ (b, \epsilon) (1, \epsilon) (b, a) \}$$

$$f(n) \begin{cases} n^{r-1} & n \leq 1 \\ an+b & -k \leq n \leq r \\ n^r & n \geq r \end{cases} - 9$$

$$n=1 \Rightarrow n^{r-1} = an+b \Rightarrow a+b=0$$

$$n=r \Rightarrow an+b = n^r \Rightarrow \frac{ra+b=1}{a=1} \\ b = -1$$

$$a+b = -4\epsilon$$

$$f(n) \begin{cases} rn - r & n \geq k \\ \epsilon - rn & n \leq k \end{cases} \Rightarrow n = k - 1 \\ \Rightarrow n = k \Rightarrow V \\ \Rightarrow k = V \Rightarrow k = \frac{V}{4}$$

$$1 - \text{تشریح در بیان فرد} \quad y^3 - 6y = x^2 - 6x + 3 \quad \text{تابعیت}$$

$$-) |x| + |y| = 3 \Rightarrow x = 0 \quad |y| = 3 \quad \begin{matrix} \nearrow y = 3 \\ \searrow y = -3 \end{matrix}$$

~~تابعیت~~

$$ج) |y| = \sqrt{1 - \cos x} \quad \cos x = 0 \quad |y| = 1$$

~~تابعیت~~ $\frac{\pi}{2}$ $1 - \cos x = 1 \quad y = \pm 1$

$$د) y^2 + x^2 + 2x + 1 = 0 \quad y^2 = -(x+1)^2$$

$x = -1 \quad y = 0$ ~~تابعیت~~

$$هـ) \sqrt[3]{y} \neq x^2 - 2x + 1 \Rightarrow \sqrt[3]{y} = -(x^2 - 2x + 1) \quad \text{تابعیت}$$

$$\text{اگر } x_1 = x_2 \Rightarrow \sqrt[3]{y_1} = \sqrt[3]{y_2} \Rightarrow y_1 = y_2$$

~~تابعیت~~

$$و) y^3 + 2y = 4x$$

$$\text{اگر } x_1 = x_2 \Rightarrow y_1^3 + 2y_1 = y_2^3 + 2y_2$$

$$y_1^3 - y_2^3 = 2y_2 - 2y_1 \Rightarrow \text{تابعیت}$$

$$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2) = 2(y_2 - y_1)$$

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

$$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 2) = 0$$

$$y_2 \pm \sqrt{y_2^2 - 4y_1 y_2 - 1} \rightarrow \Delta \leq 0$$

$\sqrt{y_1 = 2}$

حالت اول

$$n \sin y = y \sin n \quad \text{حالت دوم}$$

$$n \sin y - y \sin n = 0 \quad n = 2\pi$$

$$\frac{n}{y} = \frac{2\pi}{y} \quad 2\pi \sin y = 0$$

$$y = 2\pi \leq \pi$$

$$\Rightarrow \sqrt{\frac{n}{y}} + \sqrt{\frac{y}{n}} = 2 \quad \text{حالت سوم}$$

$$\frac{n}{y} + \frac{y}{n} + 2 = 2$$

$$\frac{n^2 + y^2}{ny} = 2 \Rightarrow n^2 + y^2 - 2ny = 0$$

$$(n - y)^2 = 0 \Rightarrow n = y$$

یابست نه!

حالت چهارم

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

اسی عبارت تنہا زمانی ہو سکتا ہے کہ $\sqrt{\frac{x}{y}} = 1$ یا $\sqrt{\frac{y}{x}} = 1$

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

