

الف) $x^2 - 5x - 6 = 0$ - 1

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

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

ب) $3x^2 - 4x - 7 = 0$ $x^2 - 1x - 9 = 0$

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

ج) $2x^2 - 5x - 3 = 0 \Rightarrow x^2 - 2.5x - 1.5 = 0$

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

د) $4x^2 - 5x - 1 = 0 \Rightarrow x^2 - 1.25x - 0.25 = 0$

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

- 4

الف) $x^2 - 5x + 6 = 0 \Rightarrow (x-3)(x-2) = 0$

$$x = 3 \quad x = 2$$

ب) $4x^2 + 5x + 1 = 0$ $a+c=b$ $x = -1$

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

$$b^2 - 4ac$$

ج) $x^2 + 2x + 3 = 0$ $\Delta < 0$ $4 - 12 < 0$ $\Delta < 0$ $\Delta < 0$ $\Delta < 0$

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

د) $3x^2 + 3x - 6 = 0$ $\Delta = b^2 - 4ac = 9 + 72 = 81$

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

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

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

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

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

$$m^2 = m+1 \Rightarrow m^2 - m - 1 = 0 \Rightarrow a+c=b$$

$$m = -1$$

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

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

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

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

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

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

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

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

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

$$b = -1$$

$$a+b = -1\epsilon$$

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

$$r(k-r) = \epsilon - rk$$

$$rk = V$$

$$k = \frac{V}{r}$$

۱- تریگ در بیان $x^3 - 6y = x^2 - 6x + 3$ $y = 3$
 تابع

۲- $|x| + |y| = 3 \Rightarrow x = 0, |y| = 3$
 $y = 3$
 $y = -3$
 تابع

۳- $|y| = \sqrt{1 - \cos x}$ $\cos x = 0$ $|y| = 1$
 $1 - \cos x = 1$ $y = \pm 1$
 تابع

۴- $y^2 + x^2 + 2x + 1 = 0$ $y^2 = -(x+1)^2$
 $x = -1$ $y = 0$
 تابع

۵- $x^3 + y^3 = 2x^2 \Rightarrow \sqrt[3]{y} = -(x^2 - 2x + 1)$

۶- $x_1 = x_2 \Rightarrow \sqrt[3]{y_1} = \sqrt[3]{y_2}$
 $y_1 = y_2$
 تابع

۷- $y^3 + 2y = 4x$

۸- $x_1 = x_2 \Rightarrow y_1^3 + 2y_1 = y_2^3 + 2y_2$

$y_1^3 - y_2^3 = 2y_2 - 2y_1 \Rightarrow$

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

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

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

$$y_2 = \frac{-y_1 \pm \sqrt{y_1^2 - 4(y_1^2 + y_1 y_2 + y_2^2 + r)}}{2} \rightarrow \Delta \leq 0$$

$\boxed{y_1 = 2}$

$$= 1 \text{ or } -1$$

$$1. \text{ or } 2) \quad x \sin y = y \sin x \quad \Rightarrow \text{or } 3$$

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

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

$$\Rightarrow \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \quad \xrightarrow{\text{or } 4} \frac{x}{y} + \frac{y}{x} = 2$$

$$\frac{x^2 + y^2}{xy} = 2 \Rightarrow x^2 + y^2 - 2xy = 0$$

$$(x - y)^2 = 0 \quad \boxed{x = y}$$

$$= 1 \text{ or } -1$$