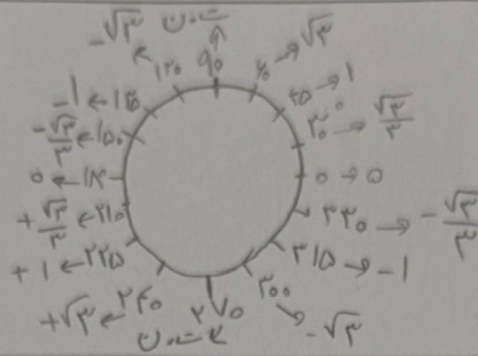




$$\begin{aligned} \frac{1}{2} - 1 + 2(-1) &= -\frac{3}{2} = -\frac{\omega}{2} \\ -(-\frac{\sqrt{3}}{2}) + \frac{\sqrt{3}}{2} - 2(-\frac{\sqrt{3}}{2}) &= \frac{5\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} + 2(\frac{\sqrt{3}}{2}) - 2(-\frac{\sqrt{3}}{2}) &= \frac{4\sqrt{3}}{2} \\ \cos(0) + \sin(\frac{\pi}{2}) &= 1 + 1 = 2 \end{aligned}$$

$$x = a \rightarrow a^2 + 2a = 2a + a + 2 \rightarrow a^2 + a - 2 = 0 \rightarrow (a-1)(a+2) = 0$$

$$a = 1 \text{ و } -2 \text{ و } a > 0$$

$$f(x) = \begin{cases} x^2 + 4x & x \geq 1 \\ 2x + 3 & x \leq 1 \end{cases} \rightarrow f(1) = 2(1) + 3 = 5$$

$$x = -3 \rightarrow 1 - b = a - 4 \rightarrow a + b = 2$$

$$f(x) = \begin{cases} 2x^2 - 6 & |x+1| \geq 2 \\ a + 2x & -3 \leq x \leq -1 \end{cases}$$

$$\begin{cases} x+1 \geq 2 \rightarrow x \geq 1 \\ x+1 \leq -2 \rightarrow x \leq -3 \end{cases}$$

$$x^2 - 4x^2 \neq 0 \rightarrow x^2(x-4) \neq 0 \rightarrow D_f: \mathbb{R} - \{0, 4\}$$

$$x \neq 0, 4$$

$$2x^2 + 4x^2 + 2x + 2 \neq 0 \rightarrow 2x^2(x+2) + 2(x+2) \neq 0$$

$$(x+2)(2x^2+2) \neq 0$$

$$x \neq -2 \text{ و } x \neq -1$$

$$D_f: \mathbb{R} - \{-2\}$$

$\left. \begin{array}{l} x^2 - 1 \geq 0 \rightarrow x^2 \geq 1 \rightarrow x \geq 1 \\ x - 2 \geq 0 \rightarrow x \geq 2 \end{array} \right\} \text{اشتراک} \rightarrow D_f: [2, +\infty)$	الف)
$\left. \begin{array}{l} 6 - 3x \geq 0 \rightarrow 6 \geq 3x \rightarrow 2 \geq x \\ 4x - 3 > 0 \rightarrow 4x > 3 \rightarrow x > \frac{3}{4} \end{array} \right\} D_f: 2 \geq x > \frac{1}{4} : (\frac{1}{4}, 2]$	ب)
$\begin{aligned} 4x - a &\xrightarrow{\text{برای } x=2 \text{ صفر است}} 12 - a = 0 \rightarrow a = 12 \\ b - 3x &\xrightarrow{\text{برای } x=4 \text{ صفر است}} b - 12 = 0 \rightarrow b = 12 \\ \frac{b}{a} &= \frac{12}{12} = 1 \end{aligned}$	د)
$\begin{aligned} x^2 - x - 6 &= 0 \rightarrow (x-3)(x+2) = 0 \rightarrow x = 3 \text{ و } -2 \\ x^2 + 1 &\rightarrow +1 \mid 13 + 26 = 0 \rightarrow (t-4)(t-9) = 0 \rightarrow t = 4 \text{ و } 9 \rightarrow x = \pm 2 \text{ و } \pm 3 \\ \frac{-3}{+} \frac{-1}{+} \frac{2}{+} \frac{3}{+} &\rightarrow D_f: (-\infty, -3) \cup (2, 3) \cup (3, +\infty) \end{aligned}$	الف)
$\begin{aligned} x^3 - 2x^2 - 5x - 6 &\xrightarrow{x=1} x^2 - x - 6 \rightarrow x = 3 \text{ و } -2 \\ -x^2 + x^2 &\xrightarrow{x=-1} x^3 + 2x^2 - 5x - 6 \rightarrow (x+2)(x-3) = 0 \rightarrow x = -2 \text{ و } 3 \end{aligned}$	ب)
$\begin{aligned} 0 - 2x - 6 &\xrightarrow{x=1} x^3 + 2x^2 - 5x - 6 \rightarrow (x+2)(x-3) = 0 \rightarrow x = -2 \text{ و } 3 \\ \frac{-2}{+} \frac{-6}{+} &\rightarrow D_f: (-\infty, -2) \cup (3, +\infty) \end{aligned}$	الف)
$\begin{aligned} 2[x] > 4 &\rightarrow [x] > 2 \rightarrow x > 2 \\ 2[x] > 5 &\rightarrow [x] > 2.5 \rightarrow x > 3 \end{aligned}$	ب)
$\begin{aligned} \sqrt{\frac{x+1}{ x-3 }} + \sqrt{\frac{4-x}{x^2+2x+2}} &\xrightarrow{x=-1} \sqrt{\frac{4-x}{x^2+2x+2}} \rightarrow x = 6 \rightarrow x \leq 6 \\ D_f: [-1, 6] - \{3\} \end{aligned}$	الف)