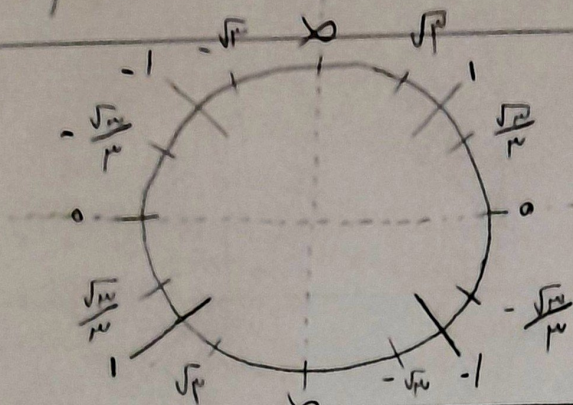




$$+ \left(\frac{\sqrt{3}}{2} \right) + \frac{\sqrt{3}}{2} - \frac{3\sqrt{3}}{2} = \boxed{\frac{\sqrt{3} - 3\sqrt{3}}{2}}$$

$$\frac{1}{2} + 1 + (-2) = \boxed{-\frac{1}{2}}$$

(الف)

$$1 + 1 = \boxed{2}$$

(ب)

$$-\frac{\sqrt{3}}{2} + \frac{3\sqrt{3}}{2} + \frac{2\sqrt{3}}{2} = \boxed{\frac{4\sqrt{3}}{2}}$$

(ج)

$$a^2 + 2a = 3a + 1 \quad f(1) = 2a + 2 + 1 = \dots \quad 2 + 2 + 1 = \boxed{4}$$

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

$$x^2 + x - 2 = 0$$

$$(x-2)(x+1) \rightsquigarrow x_1 = 2, x_2 = -1 \rightsquigarrow x = a$$

$$x = -2 \rightsquigarrow 11 - b = a - 4 \rightarrow \boxed{a + b = 14}$$

$$a + b = 14$$

$$-2x(x^2 + 1) = 4(x^2 + 1)$$

$$-2x = 4 \rightarrow \boxed{x \neq -2}$$

(ب)

$$x^3 - 4x^2 \neq 0$$

$$x^2(x-4)$$

$$\downarrow \neq 0 \rightsquigarrow x \neq 0 \text{ و } 4$$

$$\boxed{\mathbb{R} - \{0, 4\}}$$

(الف)

$\left. \begin{array}{l} 4 - 3x \geq 0 \\ \frac{x}{1-x} \end{array} \right\} \rightarrow (-\infty, \frac{4}{3}]$ $\left. \begin{array}{l} 4x - 3 > 0 \\ \frac{x}{-3-x} \end{array} \right\} \rightarrow (\frac{3}{4}, +\infty)$ $\boxed{(\frac{3}{4}, \frac{4}{3}]}$	$\left. \begin{array}{l} x^2 - 1 \geq 0 \\ \frac{1}{1-x} \end{array} \right\} \rightarrow (-\infty, -1] \cup [1, +\infty)$ $\left. \begin{array}{l} x - 1 \geq 0 \\ \frac{x}{-3-x} \end{array} \right\} \rightarrow [1, +\infty)$ $\boxed{[3, +\infty)}$	
$4x - a \geq 0$ $\frac{x}{-3-x}$ $\frac{b - 3x}{-3-x} \geq 0$ $\frac{b}{-3-x}$ $\left(\frac{b}{-3-x} = \frac{a}{-3-x} \right) \rightarrow b = \frac{a}{-3-x} \cup b = a \rightarrow \boxed{\frac{b}{a} = 1}$		
$\frac{(x-3)(x+2)}{(x-1)(x-4)} \geq 0$ $\frac{-3 \quad 2 \quad 1 \quad 4}{+ \quad - \quad + \quad - \quad +}$	$(-\infty, -2] \cup [1, 3) \cup (4, +\infty)$	
$\frac{(x-1)(x-2)(x-3)}{-(x+1)(x+2)(x+3)}$ $\frac{-3 \quad -2 \quad -1 \quad 1 \quad 2 \quad 3}{- \quad + \quad - \quad + \quad - \quad +}$	$(-\frac{3}{2}, -1) \cup (-\frac{2}{3}, -1] \cup [2, 3]$	
$x[x] \geq 0 \rightarrow [x] \geq \frac{1}{x}$ $\boxed{[3, +\infty)}$	$x[x] \geq 0 \rightarrow x[x] \geq 1$ $[x] \geq \frac{1}{x} \rightarrow \boxed{[1, +\infty)}$	
$x \geq 1 \rightarrow \text{دال}$ $[-\infty, 1) \rightarrow \text{دال}$ $\boxed{D = \mathbb{Q}}$	$x \neq 1, x \geq -1 \rightarrow \text{دال}$ $4 \geq x \rightarrow \text{دال}$ $\boxed{D = [-1, 4] - \{1\}}$	1.