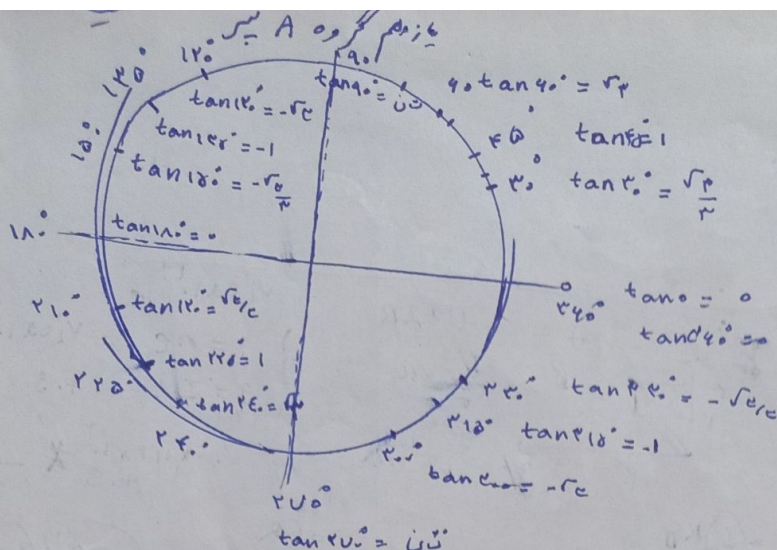




(1)

$$الف) \frac{1}{r} - 1 + r \times (-\frac{1}{r}) = -\frac{1}{r}$$

$$ب) -(-\frac{\sqrt{r}}{r} + \frac{\sqrt{r}}{r} - r \times (-\frac{\sqrt{r}}{r})) = \frac{\omega \sqrt{r}}{r}$$

$$ج) -\frac{\sqrt{r}}{r} + r \frac{\sqrt{r}}{r} - r(-\frac{\sqrt{r}}{r}) = r \frac{\sqrt{r}}{r}$$

$$د) \cos 0^\circ + \sin \frac{\pi}{r} = r$$

$$a^r + r a \neq r a + a + r$$

$$a^r + a - r = 0$$

$$a = 1, a = -r$$

(2)

$$f(x) = rx + 1 + r \xrightarrow{f(1)} f(1) = \omega$$

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$$x = r \rightarrow rx - b = a + rx$$

$$1n - b = a - r$$

$$a + b = r$$

(3)

$$الف) y = \frac{1}{x^r - rx^r} = \frac{1}{x^r(x - r)} \xrightarrow{0 \neq x} D = \mathbb{R} - \{0, r\}$$

(4)

$$ب) y = \frac{1}{rx^r + rx^r + rx + r} = \frac{1}{rx(x^r + 1) + r(x^r + 1)} \xrightarrow{0 \neq x} D = \mathbb{R} - \{-r\}$$

$$الف) x^r - 1 \geq 0 \rightarrow \frac{-1}{+ \phi - \phi +} \rightarrow x \in \mathbb{R} - (-1, 0)$$

$$x - r \geq 0 \rightarrow x \geq r$$

$$\} \rightarrow x \in [r, +\infty)$$

(5)

$$ب) \begin{cases} r - rx \geq 0 \rightarrow x \leq r \\ rx - r \geq 0 \rightarrow x \geq 1 \end{cases} \rightarrow x \in [1, r]$$

$$\begin{cases} 4x-a \geq 0 \\ b-4x \geq 0 \end{cases} \rightarrow \text{فقط في الحدودتين}$$

$$12-a=0 \rightarrow a=12$$

$$b-4=0 \rightarrow b=4 \rightarrow \frac{b}{a} = \frac{4}{12} = \frac{1}{3}$$

$$y = \sqrt{\frac{(x-w)(x+y)}{(x^2-4)(x^2-a)}} \rightarrow \frac{-w \quad -y \quad y \quad w}{+ \quad - \quad - \quad +}$$

$$x \in (-\infty, -w) \cup (y, +\infty) - \{w\}$$

$$y = \sqrt{\frac{x^2 - yx^2 - w x + 4}{x^2 + yx^2 - w x - 4}} \rightarrow \sqrt{\frac{x(x-1)^2 - 4x + 4}{x(x+1)^2 - 4x - 4}} = \sqrt{\frac{x(x-1)^2 - 4(x-1)}{x(x+1)^2 - 4(x+1)}} = \sqrt{\frac{(x-1)(x^2 - x - 4)}{(x+1)(x^2 + x - 4)}}$$

$$y = \sqrt{\frac{(x-1)(x-4)(x+1)}{(x+1)(x+4)(x-1)}} \rightarrow \frac{-w \quad -y \quad -1 \quad 1 \quad y \quad w}{+ \quad - \quad - \quad + \quad - \quad +}$$

$$x \in (-\infty, -w) \cup [-y, -1) \cup (1, y) \cup [w, +\infty)$$

$$a) \quad y[x] - 4 \geq 0 \quad y[x] \geq 4 \quad [x] \geq y \rightarrow x \geq y \rightarrow x \in [y, +\infty)$$

$$b) \quad y[x] - w \geq 0 \quad [x] \geq \frac{w}{y} \rightarrow x \geq w \rightarrow x \in [w, +\infty)$$

$$a) \quad \frac{x+1}{|x-w|} \geq 0 \rightarrow x+1 \geq 0, x \neq w \rightarrow x \in [-1, +\infty) - \{w\}$$

$$\frac{4-x}{x^2 + yx + 4} \geq 0 \rightarrow \Delta < 0 \rightarrow \text{موجب دوماً} \Rightarrow 4-x \geq 0 \rightarrow x \leq 4$$

$$b) \quad [x] \geq 0 \rightarrow x \geq 1$$

$$4-y-[x] \geq 0 \rightarrow x \leq w$$

$$\rightarrow x \in \emptyset$$