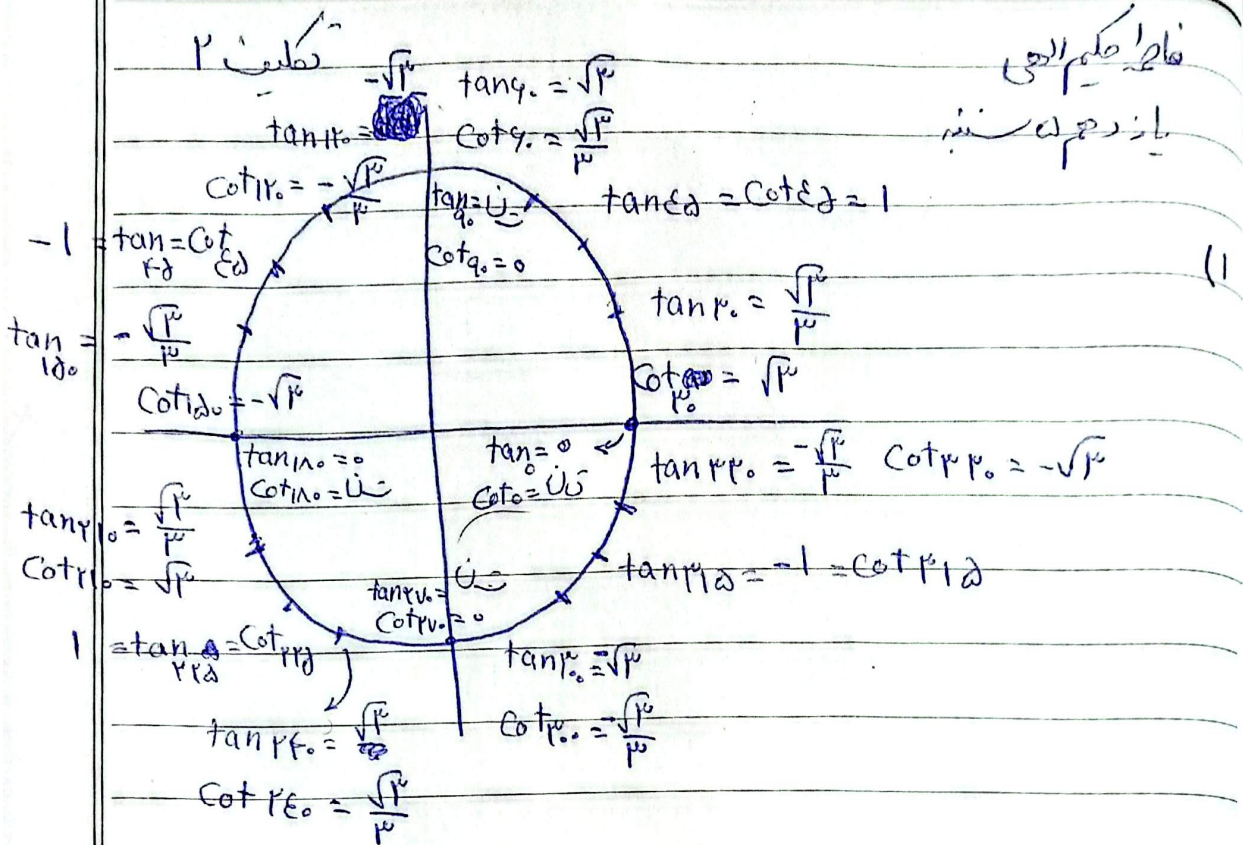




1/2

$$a^r + fa = \frac{ra + a + r}{ra} \Rightarrow a^r + a - r = 0 \quad (1)$$

$$a = 1 \Rightarrow \text{...}$$

$$f(1) = 1 + r = a$$

$$x = -r \Rightarrow r \times 9 - b = -9 + a \Rightarrow a + b = rf \quad (2)$$

$$(a) \quad x^r - fm^r \neq 0 \Rightarrow x^r(n-r) \neq 0 \quad (3)$$

$$D_f = \mathbb{R} - \{0, f\}$$

$$\rightarrow rn^r + rx^r + rx + r \neq 0 \Rightarrow \underbrace{r + rn^r + x + r}_{x^r(n+r)} \neq 0$$

$$D_f = \mathbb{R} - \{-r\}$$

$$(x^r + 1)(x + r) \neq 0$$

$$\text{الف.) } \frac{1}{r} + (-1) + 1x - 1 = -1, 0 \quad (1)$$

$$\text{ب.) } -(-\frac{\sqrt{r}}{r}) + \frac{\sqrt{r}}{r} - r(-\frac{\sqrt{r}}{r}) = \frac{2\sqrt{r}}{r}$$

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

$$\text{د.) } 1 + 1 = 2$$

$$\text{الف.) } \left. \begin{array}{l} x-1 \geq 0 \\ x \geq 1 \end{array} \right\} \begin{array}{l} x^2-1 \geq 0 \\ \frac{-1+1}{+1-1+} \end{array} \xrightarrow{\cap} D_f = [1, +\infty) \quad (4)$$

$$\text{ب.) } \left. \begin{array}{l} 4-rx \geq 0 \Rightarrow r \geq x \\ 4x-r \geq 0 \Rightarrow x \geq \frac{1}{r} \end{array} \right\} \xrightarrow{\cap} \frac{1}{r} \leq x \leq r. D_f = \left(\frac{1}{r}, r\right]_{1/2}$$

~~$$x-a \geq 0 \Rightarrow x \geq a$$~~

~~$$b-rx \geq 0 \Rightarrow x \leq \frac{b}{r}$$~~

$$4x-a \geq 0 \Rightarrow x \geq \frac{a}{4} \quad b-rx \geq 0 \Rightarrow \frac{b}{r} \geq x$$

$$\xrightarrow{\cap} \frac{b}{r} \geq x \geq \frac{a}{4} \Rightarrow \left. \begin{array}{l} a=12 \\ b=4 \end{array} \right\} \Rightarrow \frac{b}{a} = \frac{1}{r}$$

$$\text{الف.) } \frac{(x-r)(x+r)}{x^2-1^2x+1^2y} = \frac{(x-r)(x+r)}{(x^2-r)(x^2-9)} \quad (1)$$

$$\begin{array}{ccccccc} & -r & -r & r & r & & \\ & + & - & - & + & + & \\ & + & - & - & + & + & \end{array}$$

$$(-r, r) \cup (r, r) \cup (-\infty, -r)$$

$$\frac{(x-1)(x-2)(n+1)}{(x-1)(n+2)(n+1)}$$

-1	-2	-1	1	2	1
$+$	$-$	$+$	$-$	$+$	$-$

~~$$\begin{aligned} & \frac{n^2 + n - 2}{n^2 + n} \\ & \frac{n^2 + n - 2}{n^2 + n} \\ & \frac{n^2 + n - 2}{n^2 + n} \end{aligned}$$~~

$$\begin{array}{r} n^2 - 2n^2 - 2n + 2 \quad | \quad n-1 \\ - n^2 - n^2 \\ \hline - n^2 - 2n \\ - n^2 + n \\ \hline -4n + 2 \end{array}$$

$$\begin{array}{r} n^2 + 2n^2 - 2n - 2 \quad | \quad n+1 \\ - n^2 - n^2 \\ \hline n^2 + n - 2 \end{array}$$

$$\begin{array}{r} - n^2 - 2n \\ \hline n^2 + n \\ \hline -4n - 2 \end{array}$$

$$D_f = [2, +\infty) \cup [1, 2) \cup [-2, -1) \cup (-\infty, -2)$$

الف) $f[n] - 1 \geq 0 \Rightarrow [n] \geq 1 \Rightarrow D_f = (1, +\infty)$ (9)

ب) $f[n] - 2 \geq 0 \Rightarrow [n] \geq 2 \Rightarrow D_f = [2, +\infty)$

ج) $\frac{-1 \quad 2}{+ \quad +} \quad \frac{4}{+ \quad -} \quad D_f = [-1, 4] = \{1\}$ (10)

د) $[n] - \epsilon \geq 0 \Rightarrow [n] \geq \epsilon \Rightarrow n \geq 1 \quad D_f = \emptyset$
 $1 - [n] \geq 0 \Rightarrow 1 \geq [n] \Rightarrow n < 2$