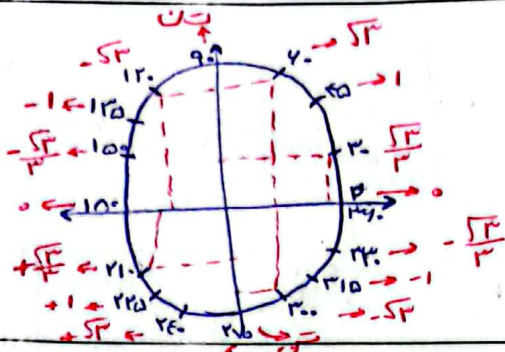


۹۰° و ۲۷۰° تان



$$\begin{aligned} -\cos(135^\circ) + \sin(135^\circ) - r \sin(45^\circ) &= 0 \\ -\cos(315^\circ) + \sin(315^\circ) - r \sin(225^\circ) &= 0 \\ \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} + \frac{r\sqrt{2}}{2} &= \frac{2\sqrt{2}}{2} \end{aligned}$$

$$\begin{aligned} \sin 270^\circ + \cos(180^\circ) + r \tan(135^\circ) &= 0 \\ \frac{1}{r} + (-1) + r \tan(45^\circ) &= 0 \\ \frac{1}{r} - 1 - r &= -\frac{2}{r} = \boxed{-\frac{2}{r}} \end{aligned}$$

$$\begin{aligned} \cos(\sin^{-1} \frac{r}{2}) &= 1 \rightarrow 1 + 1 = \boxed{2} \\ \sin(\cos^{-1} \frac{r}{2}) &= \frac{r}{2} \rightarrow \frac{r}{2} \geq \sin 90^\circ = 1 \end{aligned}$$

$$\begin{aligned} \cot(135^\circ) + r \cot(45^\circ) + r \tan(135^\circ) &= 0 \\ \cot(45^\circ) + r \cot(45^\circ) - r \tan(315^\circ) &= 0 \\ -\frac{\sqrt{2}}{2} + r \frac{\sqrt{2}}{2} + r \frac{\sqrt{2}}{2} &= \boxed{\frac{r\sqrt{2}}{2}} \end{aligned}$$

$$a^r + r a = r a + a + r$$

$$a^r + r a = r a + r$$

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

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

$$a = -r \text{ or } a = 1 \checkmark$$

$$1 + r = 2 \checkmark$$

$$r + 1 + r = 2 \checkmark$$

$$\boxed{f(1) = a} \checkmark$$

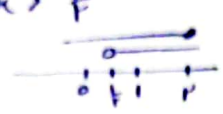
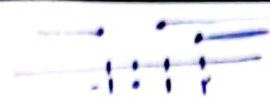
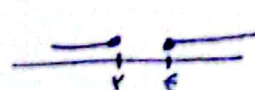
$$\begin{aligned} |x+1| \geq 2 &\rightarrow x+1 \geq 2 \rightarrow x \geq 1 \\ &\rightarrow x+1 \leq -2 \rightarrow x \leq -3 \end{aligned}$$

$$\begin{aligned} x = -3 &\rightarrow \begin{cases} 1a - b \\ a - 4 \end{cases} \rightarrow \begin{cases} -b + 1a = a - 4 \\ \boxed{a + b = 2} \end{cases} \end{aligned}$$

$$\begin{aligned} r a^r + r a^r + r a + r &\neq 0 \quad D_f = \mathbb{R} - \{-r\} \\ r(a^r + r a^r + a + r) &\neq 0 \\ r a^r(a+r) + r(a+r) &\neq 0 \quad \boxed{a \neq -r} \\ (a+r)(r a^r + r) &\neq 0 \quad r(a+r)(a^r + 1) \neq 0 \end{aligned}$$

$$\begin{aligned} a^r - r a^r &\neq 0 \\ a^r(a-r) &\neq 0 \\ a \neq 0 &\quad a \neq r \end{aligned}$$

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

$4 - r^2 x \geq 0$ $r^2 x \leq 4 \rightarrow x \leq \frac{4}{r^2}$ $4x - r^2 \geq 0$ $4x \geq r^2 \rightarrow x \geq \frac{r^2}{4}$ $D_f = \left(\frac{r^2}{4}, \frac{4}{r^2}\right]$ 	$x^2 - 1 \geq 0$ (الف)  $D_f = [r, +\infty) \in \Pi$ $\begin{cases} x^2 \geq 1 \rightarrow x \geq 1 \\ x \leq -1 \\ x - r \geq 0 \rightarrow x \geq r \end{cases}$	6
$4x - a \geq 0$ $4x \geq a$ $x \geq \frac{a}{4}$	$b - r^2 x \geq 0$ $r^2 x \leq b$ $x \leq \frac{b}{r^2}$ $\frac{b}{r^2} = r \rightarrow b = r^3$ $\frac{a}{4} = r \rightarrow a = 4r$ $\frac{a}{4} \leq x \leq \frac{b}{r^2}$ $\frac{b}{a} = \frac{r^3}{4r} = \frac{r^2}{4} = \boxed{\frac{1}{r^2}}$	7
$\frac{x^2 - rx^2 - ax + 4}{x^2 - x - 4}$ $(x-1)(x^2 - x - 4)$ $(x-1)(x+r)(x-r)$ $\frac{x^2 + rx^2 - ax - 4}{x^2 + x - 4}$ $(x+1)(x-r)(x+r)$ طبق جدول بقسمة علامته $D_f = (-r, -r] \cup (-1, 1] \cup (r, r]$	$D_f = R - \{\pm r, \pm r\}$ $x^2 - x - 4 \geq 0$ (الف) $(x-r)(x+r) \geq 0$ $x \geq r \quad x \leq -r$ $x = \pm r$ $x = \pm r$ $x^2 - 1 \geq rx^2 + r^2 \geq 0$ $\frac{(x^2 - 4)(x^2 - 9)}{(x-r)(x+r)(x+r)(x-r)} \geq 0$	8
$r[x] - a \geq 0$ $r[x] \geq a$ $[x] \geq \frac{r}{10}$ التي عند صفر بما أن $r < 10$ $D_f = [r, +\infty)$	$r[x] - 4 \geq 0$ (الف) $r[x] \geq 4$ $[x] \geq r \rightarrow [r, +\infty)$ $D_f = [r, +\infty)$	9
$[x] - r \geq 0$ $[x] \geq r \rightarrow x \geq r$ $r - [x] \geq 0 \rightarrow [x] \leq r \rightarrow x \leq r$ 	$x+1 \geq 0 \rightarrow x \geq -1$ (الف) $x - r \neq 0 \rightarrow x \neq r$ $4 - x \geq 0 \rightarrow x \leq 4$ $x^2 + rx + r \rightarrow (x+r)^2$ مما هو صفر $D_f = [-1, 4] - \{r\}$	10