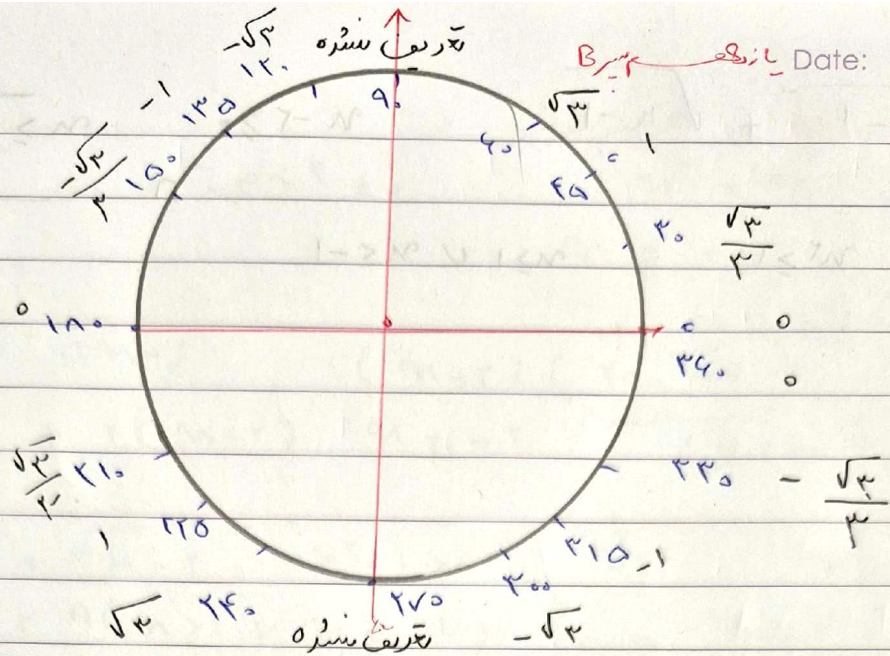


Subject: تالیف ۲

$$\tan = \frac{\sin}{\cos}$$



الف) $\frac{1}{r} + (-1) + r(-1) = -\frac{2}{r}$ $\sin \frac{\pi}{4} + \cos \frac{\pi}{4} + r \tan \frac{\pi}{4}$

ب) $-\frac{(-\sqrt{r})}{r} + \frac{\sqrt{r}}{r} - r(-\frac{\sqrt{r}}{r}) = -\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - r \sin \frac{\pi}{4}$

$\frac{\sqrt{r}}{r} + \frac{\sqrt{r}}{r} + \frac{r\sqrt{r}}{r} = \frac{5\sqrt{r}}{r}$

ج) $-\frac{\sqrt{r}}{r} + r(\frac{\sqrt{r}}{r}) - r(-\frac{\sqrt{r}}{r}) = \cos \frac{\pi}{4} + r \cos \frac{\pi}{4} - r \tan \frac{\pi}{4}$

$-\frac{\sqrt{r}}{r} + \frac{r\sqrt{r}}{r} + \frac{r\sqrt{r}}{r} = \frac{r\sqrt{r}}{r}$

د) $\cos(0) + \sin(\frac{\pi}{r})$
 $1 + 1 = 2$

$\cos(\sin \pi) + \sin(\pi \cos \pi)$

$(a > 0) \quad f_1, f_2, \dots, f_n \quad n \geq a$

$f_1(a) = f(a) \quad a^r + r a = r a + r \quad \begin{cases} r n + a + r & n \leq a \\ r n + a + r & n \geq a \end{cases}$

$a^r + a - r = 0$

$(a+r)(a-1) = 0$

$a = 1, -r$

$f_1(n) = 1^r + r = a$

$1 = a \text{ or } a > 0$

$|n+1| \geq r$

$n+1 \geq r$

$n \geq 1$

$f(n) = r n^r - b \quad |n+1| \geq r$

$n+1 \leq -r$

$n \leq -r$

$\begin{cases} a + r n - r & n \leq -1 \end{cases}$

$r(-r)^r - b = a + r(-r)$

$1^r - b = a - r$

$r^r = a + b$

سین و کسین و تانژانت و کوتانژانت

$$y = \frac{1}{n^2 - rn^2}$$

$$n^2 - rn^2 \neq 0$$

$$n^2 \neq rn^2$$

$$n \neq 0, r$$

$$R = \{0, r\}$$

$$n \neq 0, r$$

$$y = \frac{1}{2n^2 + rn^2 + rn + r}$$

$$(n+r)(2n^2+r)$$

$$R = \{0, r\}$$

$$2n^2(n+r) + r(n+r) \quad n \neq -r$$

$$\oplus \text{ موده}$$

$$y = \sqrt{n^2 - 1} + \sqrt{n - r} \quad n^2 - 1 \geq 0 \quad n^2 \geq 1$$

$$n \geq 1 \vee n \leq -1$$

$$n - r \geq 0 \quad n \geq r \quad n(n \geq 1 \vee n \leq -1) \rightarrow n \geq r$$

$$y = \frac{\sqrt{a - rn}}{\sqrt{4n - r}}$$

$$a - rn \geq 0 \quad rn \leq a$$

$$rn \leq a$$

$$n \leq \frac{a}{r}$$

$$\sqrt{4n - r}$$

$$4n - r \geq 0 \quad 4n \geq r$$

$$n \geq \frac{r}{4}$$

$$n \quad \frac{1}{4} \leq n \leq \frac{a}{r}$$

$$y = \sqrt{4n - a} + \sqrt{b - rn}$$

$$4n - a \geq 0 \quad a \leq 4n$$

$$b - rn \geq 0$$

$$\frac{a}{4} \leq n$$

$$\frac{b}{a} = \frac{4}{r} = \frac{1}{r}$$

$$rn \leq b$$

$$n \leq \frac{b}{r}$$

$$\frac{a}{4} \leq n \leq \frac{b}{r}$$

$$\frac{a}{4} = \frac{b}{r} = r$$

$$a = 4r$$

$$b = 4$$

چون $\frac{a}{4} = \frac{b}{r}$ پس

$$y = \sqrt{(n-r)(n+r)}$$

$$\sqrt{(n^2 - r)(n^2 + r)}$$

$$(n-r)(n+r) \quad (n-r)(n+r)$$

$$(r, +\infty) \cup (-\infty, -r) - \{r\}$$

$$\begin{array}{cccc} -r & -r & r & r \\ + & - & + & + \\ \oplus & \oplus & \oplus & \oplus \end{array}$$

$$y = \sqrt{\frac{n^2 - rn^2 - 2n + 4}{n^2 + rn^2 - 2n + 4}} \sqrt{\frac{(n-1)(n^2 - n - 4)}{n+1(n^2 + n - 4)}}$$

$$\sqrt{\frac{(n-1)(n-r)(n+r)}{(n+1)(n+r)(n-r)}}$$

$$\begin{array}{cccc} -r & -r-1 & 1 & r \\ + & - & + & + \\ \oplus & \oplus & \oplus & \oplus \end{array}$$

$$(-\infty, -r) \cup [-r, -1) \cup [1, r) \cup [r, +\infty)$$

الف) $y = \sqrt{r[n] - 4}$ $r[n] - 4 \geq 0$ پایه گیری

$r[n] \geq 4$ $[n] \geq 2$ $n \geq 2$

ب) $y = \sqrt{r[n] - 8}$ $r[n] - 8 \geq 0$ $r[n] \geq 8$ $[n] \geq 8$ چون برآورد شماره عددی صحیح است.

$n \geq 3$

الف) $y = \sqrt{\frac{n+1}{|n-3|}} + \sqrt{\frac{4-n}{n^2+2n+8}}$ $4-n \geq 0$ $n \leq 4$

$n \geq -1$ $n+1 \geq 0$ شماره 3 جز شماره 4 است $4-14 < 0$

$-1 \leq n \leq 4$ $\{3\}$

ب) $y = \sqrt{[n] - 4} + \sqrt{2 - [n]}$ $[n] - 4 \geq 0$ $[n] \geq 4$ $n \geq 4$

$2 - [n] \geq 0$ $[n] \leq 2$ $n \leq 2$

$I \cap II = \emptyset$