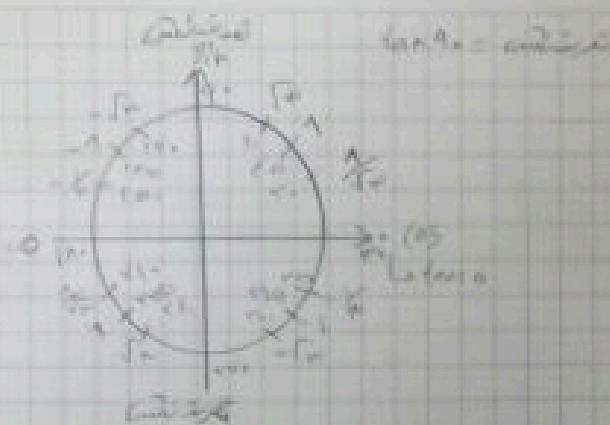


Subject:

Date:



Bismillah - الرحمن الرحيم

(1)

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

(2)

$\cot = \frac{\cos}{\sin} = \frac{1}{\tan}$

$$2) -\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - r \sin \frac{\pi}{4} = \frac{\sqrt{2}}{r} + \frac{\sqrt{2}}{r} - \frac{\sqrt{2}}{r} = \boxed{\frac{\sqrt{2}}{r}}$$

$-\left(-\frac{\sqrt{2}}{r}\right) \quad \frac{\sqrt{2}}{r} \quad -r\left(-\frac{\sqrt{2}}{r}\right)$

$$3) \cot \frac{\pi}{4} + \cot \frac{\pi}{4} - r \tan \frac{\pi}{4} = -\frac{1}{r} + \frac{1}{r} + \frac{1}{r} = \boxed{\frac{1}{r}}$$

$-\frac{1}{r} \quad +\left(-\frac{1}{r}\right) \quad -r\left(\frac{1}{r}\right)$

$$4) \cos(\sin \pi) + \sin(\pi \cos \frac{\pi}{2}) = 1 + 1 = \boxed{2}$$

$\underbrace{\cos(\sin \pi)}_1 \quad \underbrace{\sin(\pi \cos \frac{\pi}{2})}_1$

$$a^2 + a = r a + a - r \rightarrow a^2 + a - r = 0 \quad a) 0 \quad (3)$$

$(a+r)(a-1) = 0 \rightarrow \begin{cases} a = -r \\ a = 1 \end{cases}$

$$f(1) = 1 + r = \boxed{1+r}$$

$$\frac{1}{a+b} - b = a - r \rightarrow \boxed{a+b = r}$$

$$\begin{aligned} |n+1| &\geq r \\ n+1 &\geq r \rightarrow \boxed{n \geq 1} \\ n+1 &\leq -r \rightarrow \boxed{n \leq -r-1} \end{aligned}$$

DAT

الف) $y = \frac{1}{x^m - 4x^r}$ (1, +∞) (6)

$\rightarrow x(x^m - 4x^r) \rightarrow x=0^+$
 $\rightarrow x(x-4) \rightarrow x=4$

x	0	4
y	-∞	∞

ب) $y = \frac{1}{x^m + 4x^r + 4}$ (-∞, -1) (7)

$\rightarrow (x^m + 4)(x^r + 1)$

$x^m + 4 = 0 \rightarrow x = -4$ $x^r + 1 = 0 \rightarrow x = -1$

x	-1
y	∞

الف) $y = \sqrt{x^2 - 1} + \sqrt{x - 4}$ (1, +∞) (8)

$x^2 - 1 \geq 0 \rightarrow x \leq -1 \text{ or } x \geq 1$
 $x - 4 \geq 0 \rightarrow x \geq 4$

$x \geq 1 \rightarrow \frac{x \geq 1}{x \leq -1} \rightarrow \emptyset$

ب) $y = \frac{\sqrt{4 - 4x}}{\sqrt{4x - 4}}$ (1/4, 1/2] (9)

$4 - 4x \geq 0 \rightarrow 4 \geq 4x \rightarrow x \leq 1$
 $4x - 4 > 0 \rightarrow 4x > 4 \rightarrow x > 1$

$b - 4x \geq 0 \rightarrow -4x \geq -b \rightarrow 4x \leq b \rightarrow x \leq \frac{b}{4}$ $\frac{b}{a} = 1/2$ (7)

$4x - a \geq 0 \rightarrow 4x \geq a \rightarrow x \geq \frac{a}{4}$ $\frac{a}{4} = \frac{b}{2} = 1 \rightarrow b = 4$
 $a = 1/2$

$\frac{4}{1/2} = \frac{1}{1/2}$

$$\text{الف) } y = \sqrt{\frac{x^2 - x - 4}{x^2 - 10x^2 + 4}}$$

$$\begin{array}{c|ccccccc} x & -\infty & -r & -1 & 1 & r & +\infty \\ \hline y & + & - & - & - & - & + \end{array}$$

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

$$\frac{(x-r)(x+1)}{x^2 - 10x^2 + 4} \geq 0$$

$$\frac{(x-r)(x+1)}{(x-1)(x+1)(x-r)(x+r)}$$

$$x = \pm r \geq \pm 1$$

(8)

$$\text{ب) } y = \sqrt{\frac{x^2 - rx^2 - \omega x + 4}{x^2 + rx^2 - \omega x - r}}$$

$$\begin{array}{c|ccccccc} x & -\infty & -r-1 & -1 & 1 & r & +\infty \\ \hline y & + & - & - & - & - & + \end{array}$$

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

$$\frac{(x+1)(x-r)(x+r)}{x^2 - rx^2 - \omega x + 4} \geq 0 \quad x = 1, r, -r$$

$$\frac{(x+1)(x+r)(x-r)}{x^2 + rx^2 - \omega x - r}$$

$$x = -1, -r, r$$

$$\text{ج) } y = \sqrt{x[n] - r} \rightarrow x[n] - r \geq 0 \rightarrow [n] \geq r$$

$$x \geq r$$

$$\text{د) } y = \sqrt{x[n] - \omega} \rightarrow x[n] - \omega \geq 0 \rightarrow [n] \geq \frac{\omega}{r, \omega}$$

$$x \geq \frac{\omega}{r}$$

$$\text{هـ) } y = \sqrt{\frac{n+1}{1-n}} + \sqrt{\frac{4-n}{2x^2 + rx + 1}}$$

$$\frac{4-n}{2x^2 + rx + 1} \geq 0$$

$$(n+1)(n+1)$$

$$n = -r$$

$$\begin{array}{c|cccc} x & -\infty & -r & 1 & +\infty \\ \hline y & + & - & - & + \end{array}$$

$$\frac{n+1}{1-n} \geq 0$$

$$n \geq -1$$

$$n \leq 4$$

$$-1 \leq n \leq 4$$

DAT

Subject:

Date:

$$\therefore y = \sqrt{\frac{[n] - k}{[n] \geq k}} \\ \frac{n \geq k}{\text{①}}$$

$$+ \sqrt{x - [n]} \\ x - [n] \geq 0 \rightarrow [n] \leq x \\ \text{② } [n \leq x]$$

$$\text{① } n \text{ ② } = \boxed{x}$$