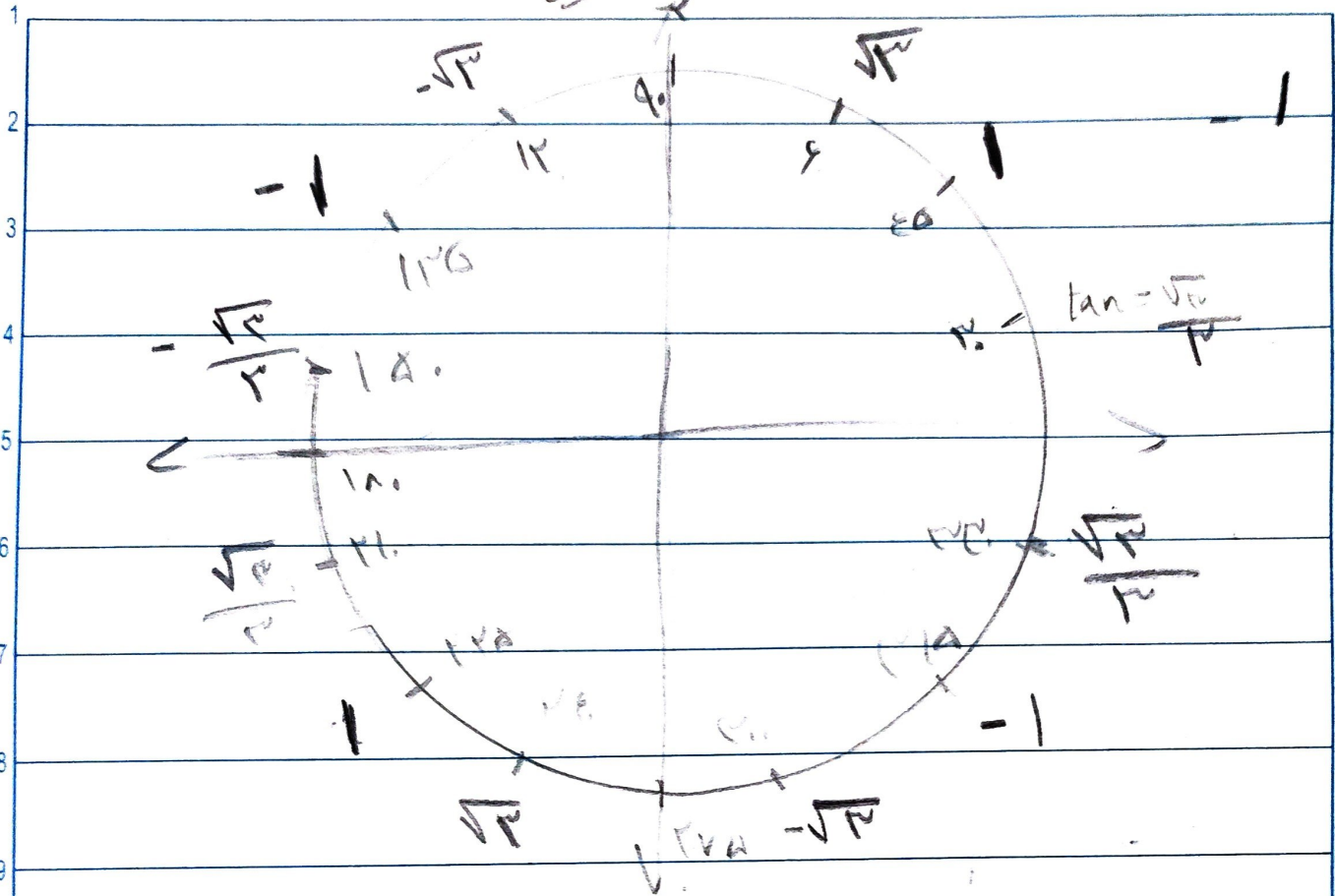


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Subject:

مربع کمره



$$\text{الف) } \sin \frac{\pi}{6} + \cos \frac{\pi}{6} + \tan \frac{\pi}{6} = \frac{1}{2} + \frac{\sqrt{3}}{2} + \frac{1}{\sqrt{3}} = \frac{1 + \sqrt{3} + 2}{2\sqrt{3}} = \frac{3 + \sqrt{3}}{2\sqrt{3}}$$

$$\text{ب) } \cos \frac{4\pi}{6} + \sin \frac{\pi}{6} - \csc \frac{\pi}{6} = \frac{-1}{2} + \frac{1}{2} - \frac{2}{1} = -1$$

$$\text{ج) } \cot \frac{\pi}{6} + \csc \frac{\pi}{6} - \tan \frac{\pi}{6} = \sqrt{3} + 2 - \frac{1}{\sqrt{3}} = \frac{3\sqrt{3} + 2\sqrt{3} - 1}{\sqrt{3}} = \frac{5\sqrt{3} - 1}{\sqrt{3}}$$

$$2) \cos(\sin \pi) + \sin(\pi \cos \frac{\pi}{2})$$

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

$$f(x) = \begin{cases} x^2 + \epsilon x & x \geq a \\ \gamma x + a + \epsilon & x \leq a \end{cases}$$

$$\Rightarrow x = a \Rightarrow a^2 + \epsilon a = \gamma a + a + \epsilon$$

$$a^2 + a \cdot \epsilon = 0$$

$$\begin{cases} x^2 + \epsilon x \geq (\gamma + \epsilon)(a - 1) \Rightarrow a = -1, 1 \\ a = 1 \quad \epsilon > 0 \\ \gamma x + \epsilon & x \leq 1 \end{cases}$$

$$f(1) = \gamma \times 1 + \epsilon = \boxed{1}$$

$$f(x) = \begin{cases} x^2 - 1 & |x+1| \geq \gamma \\ a + \gamma x & -\gamma \leq x \leq -1 \end{cases}$$

$$|x+1| \geq \gamma \Rightarrow x+1 \geq \gamma \quad x \geq 1$$

$$x \leq -\gamma$$

$$x = -r \rightarrow rx - b = 11 - b$$

$$a + rx \Rightarrow a - r$$

$$11 - b = a - r \quad \boxed{a + b - rx}$$

$$\text{الف) } g = \frac{1}{x^2 - \varepsilon x^2} \rightarrow \frac{1}{x^2(x - \varepsilon)} \quad -a$$

$$\mathbb{R} - \{0, \varepsilon\}$$

$$\begin{matrix} \downarrow & \downarrow \\ 0 & \varepsilon \end{matrix}$$

$$\text{ب) } g = \frac{1}{rx^2 + \varepsilon x^2 + rx + \varepsilon}$$

$$rx^2(ax + r) + r(ax + r)$$

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

$$\varepsilon < r \quad \text{مثلاً}$$

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

$$\text{الف) } g = \sqrt{x^2 - 1} + \sqrt{x + 2} \rightarrow x^2 - 1 \geq 0 : \varepsilon$$

$$x^2 - 1 \geq 0 \rightarrow x \geq 1 \quad x \leq -1$$

$$D_f = [1, +\infty)$$

$$y = \frac{\sqrt{x-r}}{\sqrt{x-r}}$$

$$x-r \geq 0 \quad r \geq x$$

$$x-r \geq 0 \quad (x > r)$$

$$D = \left(\frac{1}{r}, \infty\right)$$

$$x > \frac{1}{r}$$

$$y = \sqrt{x-a} + \sqrt{b-x}$$

$$b \geq x$$

$$x \geq a$$

$$I_1 = (-\infty, k] \quad I_2 = [k, +\infty)$$

$$I_1 = (-\infty, r], \quad I_2 = [r, +\infty)$$

$$b \geq x \Rightarrow b = x$$

$$\frac{b}{a} = \frac{x}{1-x} = \frac{1}{x}$$

$$x \geq a \quad a = 1-r$$

$$y = \sqrt{\frac{x^2 - x - 2}{x^2 - (x+2) + 2}}$$

$$\Rightarrow \begin{cases} (x-r)(x-r) = 1 \\ (x-r)(x-r) \end{cases}$$

$$+ \frac{1}{x} - \frac{1}{x} + \frac{1}{x} + \frac{1}{x}$$

$$D_1 = (-\infty, r) \cup (r, \infty)$$

$$y = \frac{\sqrt{x-r}}{\sqrt{x-r}}$$

$$x-r \geq 0 \quad r \geq x$$

$$x-r \geq 0 \quad |x| > 1$$

$$D_f = \left(\frac{1}{r}, r \right]$$

$$x > \frac{1}{r}$$

$$y = \sqrt{x-a} + \sqrt{b-x}$$

$$b \geq x$$

$$x \geq a$$

$$I_1 = (-\infty, k] \quad I_2 = [k, +\infty)$$

$$I_1 = (-\infty, r], \quad I_2 = [r, +\infty)$$

$$b \geq x \Rightarrow b = x$$

$$x \geq a \quad a = \frac{1}{r}$$

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

$$y = \sqrt{\frac{x^2 - x - 2}{x^2 - 10x + 25}}$$

$$\Rightarrow \begin{cases} (x-2)(x+1) \\ (x-5)(x-5) \end{cases}$$

$$+ \frac{1}{x-2} - \frac{1}{x-5} + \frac{1}{x-5} + \frac{1}{x-5}$$

$$D_f = (-\infty, 2) \cup (2, 5) \cup (5, +\infty)$$

$$-) \sqrt{\frac{n^3 - 2n^2 - 4n + 4}{n^3 + 2n^2 - 4n - 4}} \Rightarrow \frac{(n-1)(n-2)(n+2)}{(n+1)(n+2)(n-2)}$$

$$\begin{array}{r} n^3 - 2n^2 - 4n + 4 \quad | \quad 9n-1 \\ n^3 - n^2 \\ \hline -n^2 - 4n + 4 \end{array}$$

$$\begin{array}{r} n^3 + 2n^2 - 4n - 4 \quad | \quad 9n+1 \\ n^3 + n^2 \\ \hline n^2 - 4n - 4 \end{array}$$

$$-n^2 - 4n + 4$$

$$+ n^2 - n$$

$$-4n + 4$$

$$4n - 4$$

$$n^2 - 4n - 4$$

$$-n^2 - n$$

$$-4n - 4$$

$$+ 4n + 4$$

0

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

$$\omega_1 | y = \sqrt{r[n]} - \varepsilon \Rightarrow r[n] \geq \varepsilon \quad - a$$

$$[n] \geq r \quad D_f = [r, +\infty)$$

$$\Rightarrow y = \sqrt{r[n]} - a \Rightarrow r[n] \geq a \quad [n] \geq \frac{a}{r}$$

$$[n] \geq r \Rightarrow D_f = [r, +\infty)$$

$$\frac{-1 \pm \sqrt{1+4}}{2}$$

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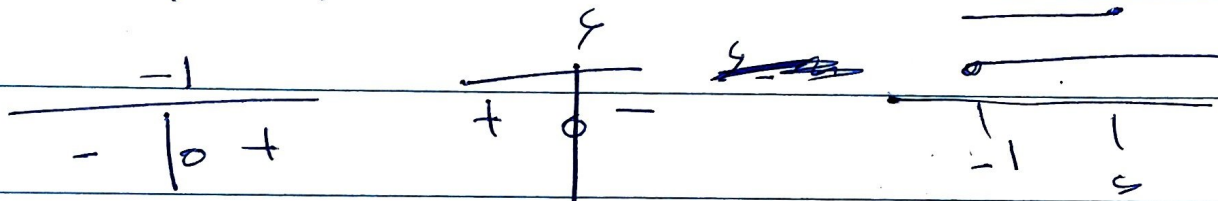
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Subject:

$$\omega_1) \sqrt{\frac{n+1}{n-1}} + \sqrt{\frac{1-n}{n^2+2n+1}}$$

$\lim_{n \rightarrow \infty} = 2$

$$-1, n \neq 1$$



$$D_f [-1, \infty) = \{1\}$$

$$\rightarrow y = \sqrt{[n]-\epsilon} + \sqrt{1-[n]} \Rightarrow [n] \geq \epsilon$$

$$[-\infty, 1) \leftarrow 1 \geq [n]$$

$$D_f = \emptyset$$

اشتراک ندارند

$$[\epsilon, +\infty)$$