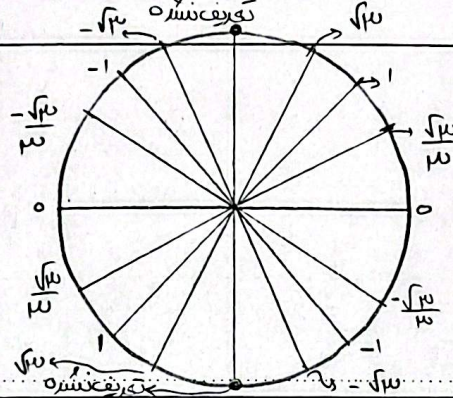


نام و نام خانوادگی: کلاس: پاسخنامه تشریحی تکلیف شماره ۲



الف) $\sin \frac{\pi}{4} + (\cos \pi + p \tan \frac{\pi}{4}) = \sin \frac{\pi}{4} + (\cos \pi + p \tan \pi) = \frac{1}{\sqrt{2}} + (-1 + p \cdot 0) = \frac{1}{\sqrt{2}} - 1 = \frac{1}{\sqrt{2}} - \frac{\sqrt{2}}{\sqrt{2}} = \frac{1 - \sqrt{2}}{\sqrt{2}}$

ب) $-(\cos \frac{\pi}{4} + \sin \frac{\pi}{4}) - p \sin \frac{\pi}{4} = -(\cos \frac{\pi}{4} + \sin \frac{\pi}{4}) - p \sin \frac{\pi}{4} = -(\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}}) - p \cdot \frac{1}{\sqrt{2}} = -\frac{2}{\sqrt{2}} - \frac{p}{\sqrt{2}} = -\frac{2+p}{\sqrt{2}}$

ج) $\cot \frac{\pi}{4} + p \cot \frac{\pi}{4} - p \tan \frac{\pi}{4} = \cot \frac{\pi}{4} + p \cot \frac{\pi}{4} - p \tan \frac{\pi}{4} = 1 + p \cdot 1 - p \cdot 1 = 1$

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

$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}}$ $\sin(\frac{1}{\sqrt{2}}) = \sin(\frac{\pi}{4}) = \sin(45^\circ) = \frac{1}{\sqrt{2}}$

$f(x) = \begin{cases} x^p + f_n & x \geq a \\ mx + a + r & x < a \end{cases}$ $f(1) = a$

$x = a \Rightarrow a^p + f_n = m \cdot a + a + r$

$a^p + a - p \cdot 0 = (a+p)(a-1) = 0 \Rightarrow a = 1$

$a = 1 \Rightarrow a = 1$

$f(x) = \begin{cases} px^p - b & |x+1| \geq p \\ a + px & -p \leq x < -1 \end{cases}$

$|x+1| \geq p \Rightarrow x+1 \geq p \Rightarrow x \geq p-1$

$\Rightarrow x+1 \leq -p \Rightarrow x \leq -p-1$

$x = -p \Rightarrow 1 - b = a - p \Rightarrow a + b = p^2$

الف) $y = \frac{1}{x^p - f_n}$

$x^p(x-f) \Rightarrow x = 0, f = \sqrt{D = IR - \epsilon_0, f_3}$

ب) $y = \frac{1}{p_n x^p + f_n x^p + p_n x + f}$

$p_n x^p(x+p) + p(x+p) \Rightarrow -p$

$(x+p)(p_n x^p + p) = (x+p) \times p \times (x^p + 1)$

$\Rightarrow D = IR - \epsilon - p_3$

توجه: در صورتی که

$$\text{الف) } y = \sqrt{x^2-1} + \sqrt{x-1}$$

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

$$x-1 \geq 0 \Rightarrow x \geq 1$$

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

$$\text{ب) } y = \frac{\sqrt{4-x^2}}{\sqrt{x-1}} \Rightarrow 4-x^2 \geq 0 \Rightarrow 4 \geq x^2 \Rightarrow -2 \leq x \leq 2$$

$$\sqrt{x-1} \Rightarrow 4x-1 \geq 0 \Rightarrow 4x \geq 1 \Rightarrow x \geq \frac{1}{4}$$

$$D = \left[\frac{1}{4}, 2\right]$$

$$y = \sqrt{4x-a} + \sqrt{b-12x}$$

بعضی مسائل D را به دست می آوریم

$$x=1 \Rightarrow 1-a=0 \Rightarrow a=1$$

$$x=1 \Rightarrow b-4=0 \Rightarrow b=4 \Rightarrow \frac{b}{a} = \frac{4}{1} = \frac{1}{1}$$

$$\text{الف) } y = \sqrt{\frac{x^2-x-4}{x^2-12x^2+124}}$$

$$\frac{(x^2-1)(x^2-12x^2+124)}{(x^2-4)(x^2-12x^2+124)} \geq 0$$

$$\frac{-1 \quad -12 \quad 124}{+ \quad - \quad +}$$

$$\text{ب) } y = \sqrt{\frac{x^2-12x^2-4x+4}{x^2+12x^2-4x-4}} \Rightarrow (x-1)(x^2-x-4) \geq 0$$

$$\frac{-1 \quad -12 \quad -4 \quad 4}{+ \quad - \quad - \quad +}$$

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

$$\text{الف) } y = \sqrt{x^2-1} - \sqrt{x-1} \Rightarrow x^2-1 \geq 0 \Rightarrow x \geq 1 \text{ or } x \leq -1$$

$$\text{ب) } y = \sqrt{x^2-1} - \sqrt{x-1} \Rightarrow x^2-1 \geq 0 \Rightarrow x \geq 1 \text{ or } x \leq -1$$

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

$$\frac{x+1}{x-1} \geq 0 \Rightarrow \frac{-1 \quad 1}{- \quad +}$$

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

$$D = [-1, 4] - \{1\}$$

$$\text{ب) } y = \sqrt{x^2-1} + \sqrt{1-x}$$

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

$$D = \emptyset$$

$$1-x \geq 0 \Rightarrow 1 \geq x \Rightarrow x \leq 1$$

$$\frac{x^2-12x^2-4x+4}{x^2+12x^2-4x-4}$$

$$\frac{x^2-12x^2-4x+4}{x^2+12x^2-4x-4}$$

تقسیم های قسمتی
ب سوال ۸: