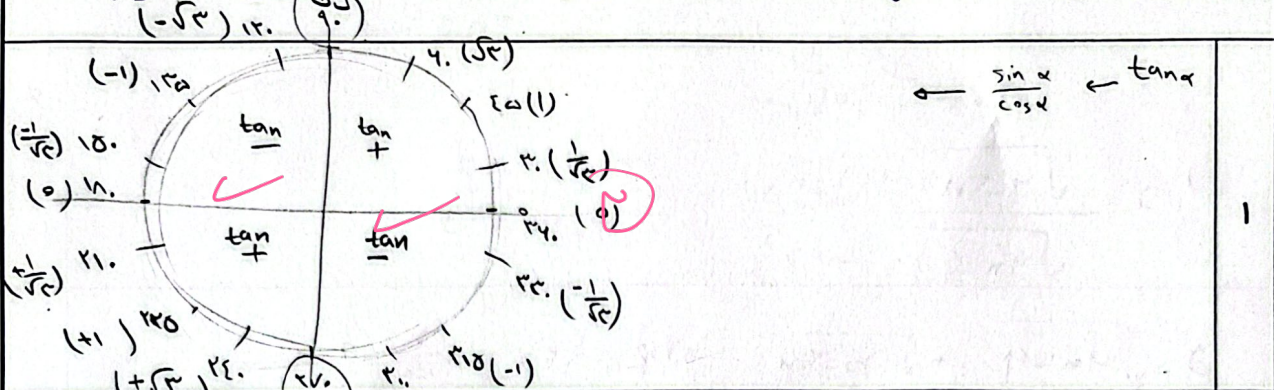


14, 15 آفرین

نام و نام خانوادگی فرزند پاسخنامه تشریحی تکلیف شماره ۲ کلاس ۱۲۰۰



۱) $\sin \frac{\pi}{4} + \cos \frac{\pi}{4} + 2 \tan \frac{\pi}{4} \rightarrow \frac{1}{2} + (-1) + (2 \times -1) = -\frac{5}{2}$

۲) $-\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - 2 \sin \frac{\pi}{4} \rightarrow -\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} - (2 \times \frac{\sqrt{2}}{2}) \rightarrow \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} - \sqrt{2} = 0$

۳) $\cot \frac{\pi}{4} + 2 \cot \frac{\pi}{4} - 2 \tan \frac{\pi}{4} \rightarrow \frac{1}{\sqrt{2}} + (2 \times \frac{1}{\sqrt{2}}) - (2 \times \frac{1}{\sqrt{2}}) = \frac{1}{\sqrt{2}} + \frac{2}{\sqrt{2}} - \frac{2}{\sqrt{2}} = \frac{1}{\sqrt{2}}$

۴) $\cos(\frac{\pi}{2} - \frac{\pi}{4}) + \sin(\frac{\pi}{2} - \frac{\pi}{4}) \rightarrow 1 + 1 = 2$

$f(n) = \begin{cases} n^2 + 2n & n \geq a \\ 2na + 2 & n \leq a \end{cases}$

$a \rightarrow a^2 + 2a = 2a + a + 2$

$a^2 + a - 2 = 0 \rightarrow$

$I \cap II \rightarrow a = 1 \rightarrow 1^2 + 2(1) = 3$

$f(n) = \begin{cases} n^2 - b \\ a + 2n \end{cases}$

$(n+1) \geq 2$

$-3 \leq n \leq -1$

$n+1 \geq 2 \rightarrow n \geq 1$

$n+1 \leq -1 \rightarrow n \leq -2$

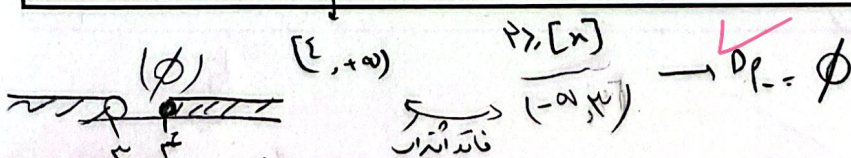
$a - 4 = 12 - b$

$a + b = 16$

۱) $y = \frac{1}{n^3 - 2n^2} \rightarrow n^2(n-2) \neq 0 \rightarrow Df = \{n \neq 0, 2\}$

۲) $y = \frac{1}{2n^3 + 2n^2 + 2n + 2} \rightarrow 2(n^3 + n^2 + n + 1) \rightarrow 2(n^2(n+1) + (n+1)) \rightarrow (n+1)(n^2+1) \times 2$

الف) $y = \sqrt{x^2 - 1} + \sqrt{x - 2} - x - 2$ $x^2 \geq 1 \rightarrow \frac{-1+1}{+0-0} + \dots \} \textcircled{x \geq 1} \text{ II} \rightarrow \text{I} \cap \text{II} = \text{Df} = [2, +\infty)$ $\text{I} = (-\infty, -1] \cup [1, +\infty)$ ب) $y = \frac{\sqrt{4-3x}}{\sqrt{4x-3}} \rightarrow \text{Df} = \{2\} \rightarrow \frac{b}{a} = ?$ $\frac{4-3x}{4x-3} \rightarrow \frac{4-3x}{4x-3} = \frac{1}{x} \rightarrow \frac{4-3x}{4x-3} = \frac{1}{x} \rightarrow 4-3x = 4x-3 \rightarrow 7 = 7x \rightarrow x = 1$	6
$y = \sqrt{4x-a} + \sqrt{b-3x} \rightarrow \text{Df} = \{2\} \rightarrow \frac{b}{a} = ?$ $\frac{4x-a}{4} \geq 0 \quad \quad \frac{b-3x}{3} \geq 0$ $\frac{a}{4} = 2 \rightarrow a = 8 \quad \quad \frac{b}{3} = 2 \rightarrow b = 6 \rightarrow \frac{b}{a} = \frac{6}{8} = \frac{3}{4}$	7
$y = \sqrt{\frac{x^2-x-4}{x^2-13x^2+44}} \rightarrow (x^2-x-4) \geq 0 \rightarrow (x-4)(x+1) \geq 0$ $x^2-13x^2+44 \geq 0 \rightarrow (x^2-9)(x^2-4) \rightarrow (x-3)(x+3)(x-2)(x+2) \geq 0$ $\frac{x^2-x-4}{x^2-13x^2+44} \geq 0 \rightarrow \text{Df} = (-\infty, -3) \cup (2, +\infty)$ $y = \sqrt{\frac{x^2-2x^2+4-0x}{x^2+3x^2-0x-4}} \rightarrow \frac{x^2-2x^2+4}{x^2+3x^2-0x-4} \geq 0 \rightarrow \frac{-x^2+4}{4x^2-4} \geq 0 \rightarrow \frac{-x^2+4}{4(x^2-1)} \geq 0$ $\frac{-x^2+4}{4(x^2-1)} \geq 0 \rightarrow \frac{-x^2+4}{4(x^2-1)} \geq 0 \rightarrow \frac{-x^2+4}{4(x^2-1)} \geq 0$	8
$y = \sqrt{2[x]-2} \rightarrow [x] \geq 2 \rightarrow \text{Df} = [2, +\infty)$ $y = \sqrt{2[x]-8} \rightarrow [x] \geq \frac{8}{2} \rightarrow [x] \geq 4 \rightarrow \text{Df} = [4, +\infty)$	9
الف) $y = \sqrt{\frac{x+1}{x-2}} + \sqrt{\frac{x-1}{x^2+2x+2}}$ $\frac{x+1}{x-2} \geq 0 \rightarrow x \geq 2$ $\frac{x-1}{x^2+2x+2} \geq 0 \rightarrow x \geq 1$ $\text{Df} = [2, +\infty) - \{3\}$ ب) $y = \sqrt{[x]-2} + \sqrt{2-[x]}$ $[x] \geq 2$ $2-[x] \geq 0 \rightarrow [x] \leq 2$ $\text{Df} = [2, 2] = \{2\}$	10



الف- ٨) $y = \sqrt{\frac{n^2 - n - 4}{n^4 - 13n^2 + 44}} \leadsto \frac{n^2 - n - 4}{n^4 - 13n^2 + 44} \geq 0 \leadsto \frac{(n-4)(n+1)}{(n^2-9)(n^2-4)} \geq 0$

$\frac{(n-4)(n+1)}{(n-3)(n+3)(n-2)(n+2)} \geq 0 \leadsto$

	-3	-2^*	2	3^*	
$+$	$\frac{0}{0}$	$-$	$\frac{0}{0}$	$+$	$\frac{0}{0}$
	$+$	$-$	$-$	$+$	$+$

$D_f = (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$