

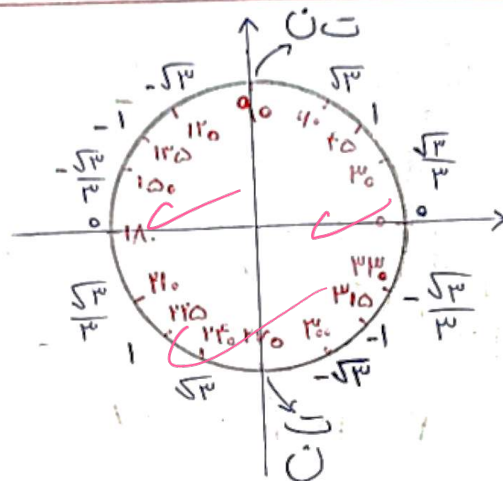
مقطع: یازدهم

B

۲۰ آفرین عالی نوشتی

تکلیف شماره: ۲

نام و نام خانوادگی: پارسا ضیائی



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الف) $\sin \frac{\pi}{4} + \cos \pi + 2 \tan \frac{\pi}{4} = \frac{1}{\sqrt{2}} + (-1) + 2(-1) = -\frac{3}{2} + \frac{1}{\sqrt{2}}$

ب) $-\cos \frac{5\pi}{4} + \sin \frac{2\pi}{3} - 3 \sin \frac{\pi}{3} = -(-\frac{\sqrt{3}}{2}) + \frac{\sqrt{3}}{2} - 3(\frac{\sqrt{3}}{2}) = \frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2} - \frac{3\sqrt{3}}{2} = -\frac{\sqrt{3}}{2}$

ج) $\cot \frac{\pi}{3} + 2 \cot \frac{\pi}{4} - 2 \tan \frac{5\pi}{4} = \frac{\sqrt{3}}{3} + 2(1) - 2(-1) = \frac{\sqrt{3}}{3} + 2 + 2 = \frac{\sqrt{3}}{3} + 4$

د) $\cos(\sin \pi) + \sin(\pi \cos \frac{\pi}{3}) = \cos(0) + \sin(\frac{\pi}{2}) = 1 + 1 = 2$

$x^2 + 4x = 2x + a + 2$ if $x = a \rightarrow a^2 + 4a = 2a + a + 2 \rightarrow a^2 + a - 2 = 0$

$\rightarrow a = \begin{cases} 1 \\ -2 \end{cases} \rightarrow f(1) = 1^2 + 4 = 5$

$|x+1| \geq 2 \rightarrow x+1 \geq 2 \rightarrow x \geq 1$
 $x+1 \leq -2 \rightarrow x \leq -3$

$\rightarrow 2x^2 - b = a + 2x$ if $x = -3 \rightarrow 2(-3)^2 - b = a + 2(-3) \rightarrow 18 - b = a - 6 \Rightarrow a + b = 24$

الف) $y = \frac{1}{x^2 - 4x}$ $x^2(x-4) \neq 0 \rightarrow x = \mathbb{R} - \{0, 4\}$

ب) $y = \frac{1}{2x^2 + 2x + 4}$ $2(x^2 + x + 2) \neq 0 \rightarrow 2(x(x+1) + 2(x+1)) \neq 0 \Rightarrow 2(x+1)(x+2) \neq 0 \rightarrow x = \mathbb{R} - \{-1, -2\}$

الف) $y = \sqrt{x^2 - 1} + \sqrt{x - 2} \rightarrow x^2 - 1 \geq 0 \rightarrow x = \mathbb{R} - (-1, 1) \rightarrow D_f = [1, +\infty)$

ب) $y = \frac{\sqrt{4 - 2x}}{\sqrt{4x - 3}} \rightarrow 4 - 2x \geq 0 \rightarrow 4 \geq 2x \rightarrow 2 \geq x$
 $4x - 3 \geq 0 \rightarrow 4x \geq 3 \rightarrow x \geq \frac{3}{4}$
 $\Rightarrow D_f = [\frac{3}{4}, 2]$

$4x - a \geq 0 \rightarrow x \geq \frac{a}{4}$ $b - 3x \geq 0 \rightarrow \frac{b}{3} \geq x$ $\frac{b}{3} = \frac{a}{4} = 2 \rightarrow b = 6, a = 12$ $\frac{b}{a} = \frac{6}{12} = \frac{1}{2}$

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$$\Rightarrow y = \sqrt{\frac{(x-r)/(x+r)}{(x-r)(x+r)}} \rightarrow + \frac{-r-r}{0} - \frac{r-r}{0} - \frac{r-r}{0} + \frac{r-r}{0}$$

الف) $y = \sqrt{r[x] - f} \rightarrow r[x] - f \geq 0 \rightarrow r[x] \geq f \rightarrow x \geq r$

$$\Rightarrow x \geq 5$$

$$y = \sqrt{r[x] - \omega} \rightarrow r[x] - \omega \geq 0 \rightarrow r[x] \geq \omega \rightarrow [x] \geq r, \omega$$

$$\Rightarrow x \geq r$$

الف) $y = \sqrt{\frac{x+1}{|x-3|}} + \sqrt{\frac{y-x}{x^2+2x+2}} \rightarrow \frac{y}{+\phi-}$
 $\frac{-1}{-\phi+} \rightarrow x = [-1, +\infty) - \{3\}$
 $\Delta \leftarrow \text{نقطة}$
 $x = (-\infty, y] \Rightarrow D_f = [-1, y] - \{3\}$

$y = \sqrt{[x] - r} + \sqrt{r - [x]} \rightarrow Df = \emptyset$
 $[x] \geq r \rightarrow x \geq r \quad \searrow \quad r \geq [x] \rightarrow x \leq r$