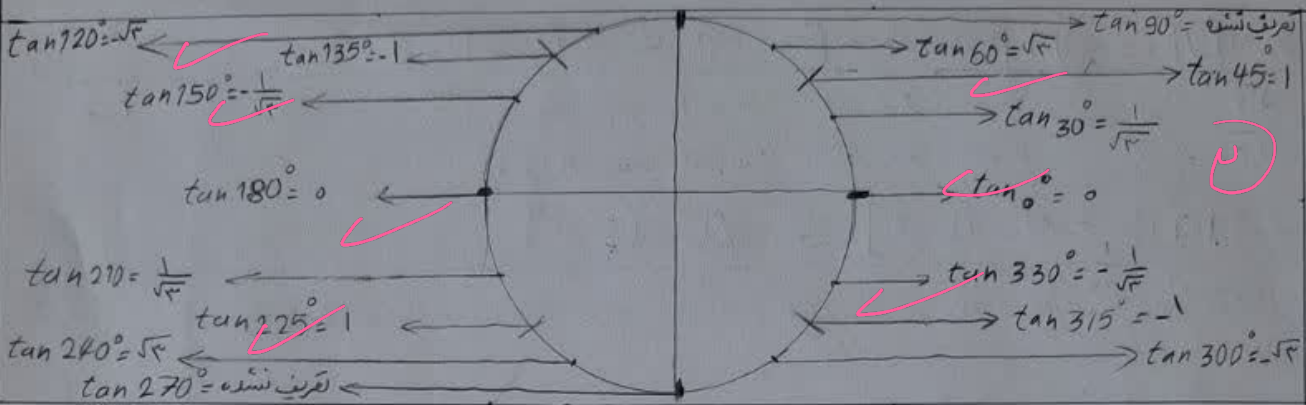


۱۹/۲۵ (۳۰۰)

نام و نام خانوادگی: محمد سید شیری
پاسخنامه تشریحی: تالیف شماره ۲ کلاس یازدهم سیر A



الف) $\sin 60^\circ + \cos 120^\circ + 2(\tan 135^\circ) = \frac{\sqrt{3}}{2} - 1 + 2(-1) = \frac{\sqrt{3}}{2} - 3 = \frac{\sqrt{3} - 6}{2}$

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

اصلی و صحیحاً از فرمول

$-\cos 10^\circ + \sin 110^\circ - 2(\sin 210^\circ) = \frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2} - 2(-\frac{\sqrt{3}}{2}) = \sqrt{3} + \sqrt{3} = 2\sqrt{3}$

$\cot 135^\circ + 2(\cot 45^\circ) - 2(\tan 10^\circ) = -\frac{1}{\sqrt{3}} + 2\frac{1}{\sqrt{3}} - 2(-\frac{1}{\sqrt{3}}) = \frac{2}{\sqrt{3}} - \frac{2}{\sqrt{3}} = 0$

د) $\cos(\sin 180^\circ) + \sin(\pi \cos 6) = \cos 0 + \sin(\frac{1}{2} \times \pi) = \cos 0 + \sin \frac{\pi}{2} = 1 + 1 = 2$

$x=a \Rightarrow a^2 + fa = 2a + a + 2 \Rightarrow a^2 + a + 2 = 0 \Rightarrow (a+2)(a-1) = 0 \Rightarrow a = -2$
 $a = -2 \Rightarrow a < 0$
 $a = 1 \Rightarrow a > 0$

$\Rightarrow f_0) = (1)^2 + f(1) = 1 + 4 = 5 \Rightarrow f_0) = 5$

$x=-2 \Rightarrow |-2+1| = 1 < 2$

پس $x=-2$ می توان با دو ضابطه نوشت

$x=2 \Rightarrow 2(-2)^2 - b = a + 2(-2) \Rightarrow 18 - b = a - 4 \Rightarrow a + b = 22$

الف) $y = \frac{1}{x^2 - 2x} \Rightarrow x^2 - 2x \neq 0 \Rightarrow x^2 - 2x = 0 \Rightarrow x(x-2) = 0$
 $\Rightarrow x = 0, 2 \Rightarrow D_f = R - \{0, 2\}$

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

$$y = \sqrt{x^2-1} + \sqrt{x-2} \Rightarrow x^2-1 \geq 0 \Rightarrow x^2 \geq 1 \Rightarrow x = (-\infty, -1] \cup [1, +\infty) \quad (\text{الف})$$

$$x-2 \geq 0 \Rightarrow x \geq 2$$

$$((-\infty, -1] \cup [1, +\infty)) \cap [2, +\infty) = [2, +\infty) \Rightarrow D_f = [2, +\infty)$$

$$y = \frac{\sqrt{4-x^2}}{\sqrt{4x-3}} \Rightarrow 4-x^2 \geq 0 \Rightarrow x^2 \leq 4 \Rightarrow x \leq 2$$

$$4x-3 \geq 0 \Rightarrow 4x \geq 3 \Rightarrow x \geq \frac{3}{4}$$

$$(-\infty, 2] \cap (\frac{3}{4}, +\infty) = (\frac{3}{4}, 2] \Rightarrow D_f = (\frac{3}{4}, 2]$$

$$y = \sqrt{4x-a} + \sqrt{b-2x} \Rightarrow 4x-a \geq 0 \Rightarrow 4x \geq a \Rightarrow x \geq \frac{a}{4}$$

موفق باشید که معضله ای باشد یعنی جواب هر دو را در یکجا بنویسید

$$b-2x \geq 0 \Rightarrow 2x \leq b \Rightarrow x \leq \frac{b}{2}$$

$$\frac{b}{2} = \frac{a}{4} \Rightarrow b = \frac{a}{2}$$

$$\frac{a}{4} = 2 \Rightarrow a = 8$$

$$\frac{b}{2} = \frac{4}{2} = 2 \Rightarrow b = 4$$

$$y = \sqrt{x^2-x-6} \Rightarrow x^2-x-6 \geq 0 \Rightarrow (x-3)(x+2) \geq 0$$

$$x^2-15x+36 \Rightarrow x=t \Rightarrow t^2-15t+36=0$$

$$\Rightarrow (t-9)(t-4)=0 \Rightarrow t=9 \text{ یا } t=4 \Rightarrow x=9 \text{ یا } x=4$$

$$-\frac{1}{2} < \frac{1}{2} \quad (\text{الف})$$

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

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

$$y = \sqrt{\frac{x^2-2x^2-5x+6}{x^2+2x^2-5x+6}} \Rightarrow \frac{x^2-2x^2-5x+6}{x^2+2x^2-5x+6} \geq 0$$

$$y = \sqrt{\frac{(x-1)(x^2-x-6)}{(x+1)(x^2+x-6)}} \Rightarrow \frac{(x-1)(x^2-x-6)}{(x+1)(x^2+x-6)} \geq 0$$

$$y = \sqrt{\frac{(x-1)(x-3)(x+2)}{(x+1)(x-2)(x+3)}} \Rightarrow \frac{(x-1)(x-3)(x+2)}{(x+1)(x-2)(x+3)} \geq 0$$

$$y = \sqrt{2[x]-5} \Rightarrow 2[x]-5 \geq 0 \Rightarrow 2[x] \geq 5 \Rightarrow [x] \geq \frac{5}{2} \Rightarrow x \geq 2.5$$

$$D_f = [2.5, +\infty)$$

$$y = \sqrt{2[x]-5} \Rightarrow 2[x]-5 \geq 0 \Rightarrow 2[x] \geq 5 \Rightarrow [x] \geq \frac{5}{2}$$

$$D_f = [2.5, +\infty)$$

$$x \geq 2.5 \quad \Leftarrow \text{اولین عدد صحیح بعد از 2.5 است (3)}$$

$$y = \sqrt{\frac{x+1}{(x-3)}} + \sqrt{\frac{4-x}{x^2+2x+4}} \Rightarrow 4-x \geq 0 \Rightarrow x \leq 4$$

$$\Delta = b^2-4ac \Rightarrow (3)^2 - (4 \times 2 \times 1) = 9 - 8 = 1 > 0 \Rightarrow \Delta > 0 \text{ و } a > 0 \Rightarrow \text{دو ریشه حقیقی دارد}$$

$$\Rightarrow x+1 \geq 0 \Rightarrow x \geq -1 \quad D_f = (-\infty, 4] \cap [-1, +\infty) = [-1, 4]$$

$$y = \sqrt{[x]-3} + \sqrt{2-[x]} \Rightarrow [x]-3 \geq 0 \Rightarrow [x] \geq 3 \Rightarrow x \geq 3$$

$$[x]-4 \geq 0 \Rightarrow [x] \geq 4 \Rightarrow x \geq 4$$

$$[4, +\infty) \cap (-\infty, 2) = \emptyset \Rightarrow \text{اشتراک ندارند}$$

$$D_f = \emptyset$$

(الف-٢) $\sin \frac{\pi}{4} + \cos \pi + 2 \tan \frac{3\pi}{4} = \frac{1}{\sqrt{2}} + (-1) + 2(-1) = -\frac{3}{\sqrt{2}} \in (-2, 5)$

(الف-١٠) $y = \sqrt{\frac{n+1}{|n-4|}} + \sqrt{\frac{4-n}{n^2+2n+2}}$

$\left\{ \begin{array}{l} \frac{n+1}{|n-4|} \geq 0 \rightarrow n \geq -1, n \neq 4 \quad I \\ \frac{4-n}{n^2+2n+2} \geq 0 \rightarrow n \leq 4 \quad II \end{array} \right.$

← فقط مقدرين مفرج!
 ← $\Delta < 0$, محاوره مثبت و بدون مقدرين

$\xrightarrow{I \cap II} D_f = [-1, 4) \cup (4, 4] \subseteq [-1, 4] - \{4\}$