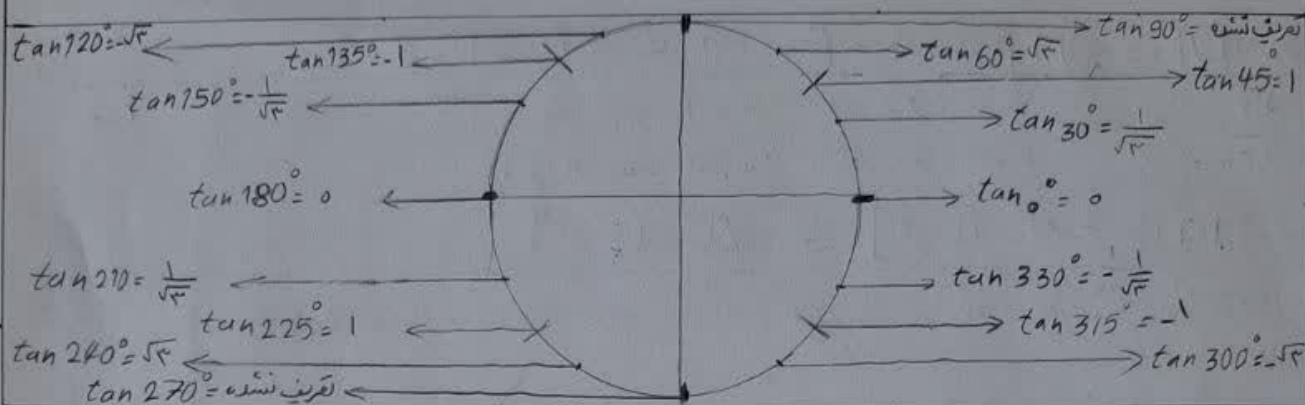


نام و نام خانوادگی: محمد سید شیری / پاسخامه تشریحی: تالیف شماره 2 / کلاس: یازدهم پسر A



$$\sin 90^\circ + \cos 180^\circ + 2(\tan 135^\circ) = \frac{\sqrt{3}}{2} - 1 + 2(-1) = \frac{\sqrt{3}}{2} - 3 = \frac{\sqrt{3}}{2} - \frac{6}{2} = \frac{\sqrt{3}-6}{2} \quad (الف)$$

$$-\cos 10^\circ + \sin 110^\circ - 2(\sin 215^\circ) = \frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2} - 2\left(-\frac{\sqrt{3}}{2}\right) = \sqrt{3} + \sqrt{3} = 2\sqrt{3} \quad (ب)$$

$$\cot 135^\circ + 2(\cot 45^\circ) - 2(\tan 10^\circ) = -\frac{1}{\sqrt{3}} + 2\left(\frac{1}{\sqrt{3}}\right) - 2\left(-\frac{1}{\sqrt{3}}\right) = \frac{2}{\sqrt{3}} + \frac{2}{\sqrt{3}} = \frac{4}{\sqrt{3}} \quad (ج)$$

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

$$x=a \Rightarrow a^2 + fa = 2a + a + 2 \Rightarrow a^2 + a + 2 = 0 \Rightarrow (a+2)(a-1) = 0 \Rightarrow a = -2 \text{ or } a = 1$$

$$a = -2 \Rightarrow a < 0 \text{ (ممنوع)} \quad a = 1 \Rightarrow a > 0 \Rightarrow a = 1$$

$$\Rightarrow f(1) = (1)^2 + f(1) = 1 + 4 = 5 \Rightarrow \boxed{f(1) = 5}$$

$$x=-2 \Rightarrow |-2+1| = 1 < 2 \text{ و } -2 < 1$$

پس  $x=-2$  را می توان با دو ضابطه نوشت

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

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

$$y = \frac{1}{2x^2 + 2x^2 + 2x + 2} \quad 2x^2 + 2x^2 + 2x + 2 \neq 0$$

$$2x^2 + 2x^2 + 2x + 2 = 2x^2(x+1) + 2(x+1) = (2x^2+2)(x+1)$$

$$x+1=0 \Rightarrow x=-1 \Rightarrow \boxed{D_f = R - \{-1\}}$$

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

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

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

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

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

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

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

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

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

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

$$\frac{a}{4} = \frac{a}{4} \Rightarrow a = 12$$

$$\frac{b}{2} = \frac{4}{12} = \frac{1}{3}$$

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

$$\sqrt{x^2-15x+36} \Rightarrow x^2-15x+36 \geq 0 \Rightarrow (x-4)(x-9) \geq 0$$

$$\Rightarrow (x-3)(x+2) \geq 0 \Rightarrow x \leq -2 \text{ or } x \geq 3$$

$$\Rightarrow (x-4)(x-9) \geq 0 \Rightarrow x \leq 4 \text{ or } x \geq 9$$

$$-\infty < -2 < 3 < 4 < 9 < +\infty$$

$$D_f = (-\infty, -2) \cup (3, 4) \cup (9, +\infty)$$

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

$$\frac{-x^2-5x+6}{3x^2-5x+6} \geq 0$$

$$\frac{-x^2-5x+6}{3x^2-5x+6} \geq 0 \Rightarrow \frac{-x^2-5x+6}{3x^2-5x+6} \geq 0$$

$$\frac{-x^2-5x+6}{3x^2-5x+6} \geq 0 \Rightarrow \frac{-x^2-5x+6}{3x^2-5x+6} \geq 0$$

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

$$D_f = [\frac{5}{2}, +\infty)$$

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

$$D_f = [\frac{5}{2}, +\infty)$$

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

$$\Delta = b^2-4ac \Rightarrow (3)^2 - (4 \times 2 \times 1) = 9 - 8 = 1 > 0 \Rightarrow \Delta > 0$$

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

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

$$y = \sqrt{[x]-4} + \sqrt{2-[x]} \Rightarrow [x]-4 \geq 0 \Rightarrow [x] \geq 4 \Rightarrow x \geq 4$$

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

$$D_f = \emptyset$$