

$$T = \frac{\Delta}{r} \Rightarrow \frac{T}{a} = \frac{\Delta}{r} \quad \frac{T+x}{a} = \frac{\sqrt{\Delta+1}}{r} \Rightarrow \frac{T}{a} + \frac{x}{a} = \frac{\sqrt{\Delta+1}}{r} \quad (1)$$

$$-\frac{x}{a} = \frac{r\sqrt{\Delta+1}-r}{r} \Rightarrow x = \frac{a(r\sqrt{\Delta+1}-r)}{r} \Rightarrow T = \frac{a(r\sqrt{\Delta+1}-r)+\Delta a}{r}$$

$$\frac{\left(\frac{(r\sqrt{\Delta+1}-r)a}{r}\right) \times a}{\frac{\Delta}{r} \times a} = \frac{r\sqrt{\Delta+1}-r}{\Delta}$$

$$\frac{\sqrt{T^2+a^2}}{T} = \frac{\sqrt{\Delta+1}}{r} \Rightarrow \frac{T^2+a^2}{T^2} = \frac{\Delta+1+r\sqrt{\Delta+1}}{r} \quad (2)$$

$$\frac{T^2+a^2}{T^2} = \frac{r+\sqrt{\Delta+1}}{r} \Rightarrow \frac{a^2}{T^2} = \frac{\sqrt{\Delta+1}}{r} \Rightarrow \frac{T^2}{a^2} = \frac{r}{\sqrt{\Delta+1}}$$

$$\sqrt{r(a^2+r)} = r - ra \Rightarrow ra^2 + ra = r - ra \Rightarrow ra^2 + 4ra - r = 0$$

$$ra^2 - 4ra + r = 0 \Rightarrow a^2 - 4a + 1 = 0$$

$$(a - \frac{4}{r})(a - \frac{1}{r}) = 0 \Rightarrow a = \frac{4}{r} \quad \boxed{a = \frac{r}{4}}$$

$$\frac{a}{\frac{r}{4}} = \frac{a}{r} = \boxed{\frac{1}{4}}$$

$$\frac{\sqrt{x+1}}{r+\sqrt{x-1}} - \frac{\sqrt{x+1}}{r-\sqrt{x-1}} = \frac{(\sqrt{x-1})^2}{\sqrt{x-1}} \quad \sqrt{\frac{x-1}{x+1}} \quad (3)$$

$$\frac{\sqrt{x+1}}{\sqrt{x-1}+r} + \frac{\sqrt{x+1}}{\sqrt{x-1}-r} = \sqrt{x-1} \Rightarrow \frac{\sqrt{x^2-1} - r\sqrt{x+1} + \sqrt{x^2-1} + r\sqrt{x+1}}{x-1-r^2}$$

$$\frac{2\sqrt{x^2-1}}{x-1} = \sqrt{x-1}$$

$$x=1 \text{ جواب نیست } \Leftarrow \sqrt{x-1} \text{ را خط صاف کنیم}$$

$$\frac{2\sqrt{x+1}}{x-10} = 1 \xrightarrow{\text{ران}} \Leftarrow x+1 = x^2 - 20x + 100$$

$$x^2 - 21x + 99 = 0 \quad \div 3 \quad \Leftarrow x^2 - 7x + 33 = 0$$

$x = \frac{7 \pm \sqrt{49 - 132}}{2}$ دور شده دارد که عدد در دامنه است

$$\frac{1}{\sqrt{2-x+2}} + \frac{1}{\sqrt{2-x-2}} = \frac{\sqrt{2-x}}{0}$$

در دامنه نیست $x=2$ ساده نمی

خرج مشترک $\rightarrow \sqrt{2-x-2} + \sqrt{2-x+2}$

$$\frac{2\sqrt{2-x}}{(2-x-2)(2-x+2)} = \frac{2\sqrt{2-x}}{2-x-4} = \frac{2\sqrt{2-x}}{-x-2}$$

$$\frac{2\sqrt{2-x}}{-(x+2)} = \frac{\sqrt{2-x}}{0}$$

$$10 = -x-2 \Rightarrow x = -12$$

$$\left(\frac{1}{x} - \frac{1}{x-1}\right)^2 + \frac{2}{x^2-x} = \frac{140}{9} \Rightarrow \left(\frac{-1}{x^2-x}\right)^2 + \frac{2}{x^2-x} = \frac{140}{9}$$

$$t^2 + 2t - \frac{140}{9} = 0 \Rightarrow t = \frac{-2 \pm \sqrt{4 + \frac{560}{9}}}{2} = \frac{-2 \pm \sqrt{\frac{568}{9}}}{2}$$

$$S_T = 2$$

$$S_1 = -\frac{b}{a} = 1$$

$$\frac{1}{x^2-x} = 20 \Rightarrow 20x^2 - 20x - 1 = 0$$

$$S_2 = -\frac{b}{a} = 1$$

$$y = -\frac{1}{x} + \frac{14}{x}$$

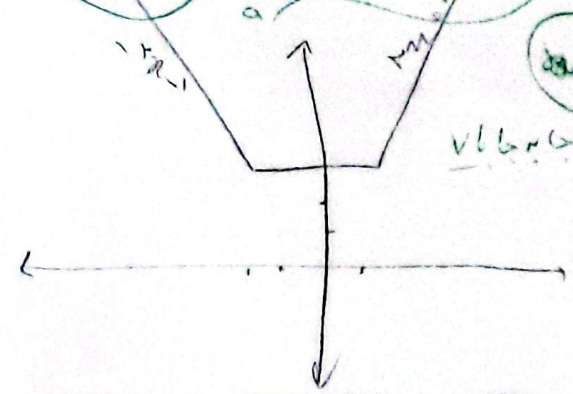
$$-\frac{1}{x} + \frac{14}{x} = 2x + 1$$

$$\frac{13}{x} = 2x + 1$$

$$-\frac{1}{x} + \frac{14}{x} = -2x - 1$$

$$\frac{13}{x} = -2x - 1$$

$$x = -4 \quad (-4, \sqrt{10})$$



$$\sqrt{(y-d)^2 + (x+1)^2} = 2\sqrt{10}$$

$$-x^2(x^2 - 4) + 20(x - 4) = (x - 4)(8 - x)(8 + x)$$

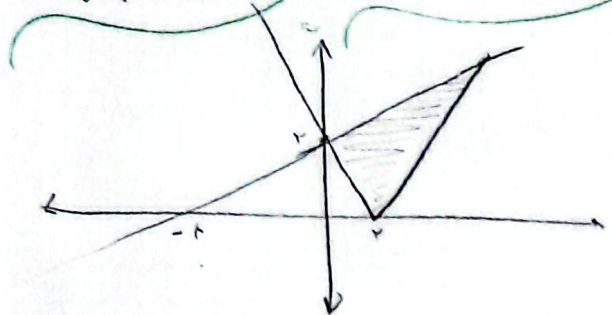
(A)

$$-(x^2 - 4x + 4) = -(x - 2)(x - 2) + \frac{-4}{1} + \frac{4}{1} + \frac{0}{1} + \frac{0}{1}$$

$$\frac{(x - 2)(x - 2)}{1}$$

در آن کاری کنید که جواب
 $I \cap I_2 = \{4\}$

$$\sqrt{4 + 0} + \sqrt{14 + 0} = 2 + 4 = 4 + 2$$



$$\sqrt{(x - 2)^2} = |x - 2|$$

(9)

(0, 2) (2, 0) (4, 4)

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

$$\frac{1}{2}x = 4 \Rightarrow x = 8$$

$$\begin{cases} 0 = 0 & 2 = 14 \\ 0 = 8 & 4 = 12 \\ 4 = 2 & 0 = 0 \\ 0 & 2 \end{cases}$$

$$\frac{21 - 4}{2} = \boxed{14} \leftarrow S$$

B

x

F

$x + 9$

BF

2.

$$\frac{1}{x} + \frac{1}{x + 9} = \frac{1}{20} \Rightarrow \frac{2x + 9}{x^2 + 9x} = \frac{1}{20}$$

(10)

$$x^2 + 9x - 40x - 180 = 0$$

$$x^2 - 31x - 180 = 0$$

$$(x - 34)(x + 5) = 0$$

$$\boxed{x = 34} \quad x = -5$$

بجز در 34 و 5، و خارج 8 و 4 است