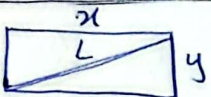


$$\frac{x}{y} = \frac{a}{c} \quad \text{اولیه} \quad \varphi = \frac{\sqrt{a}+1}{2}$$

$$\varphi \times y = x \Rightarrow \frac{\varphi y}{\frac{a}{c} y} = \frac{\text{مسطح دوم}}{\text{مسطح اولیه}} \Rightarrow \frac{xy}{\frac{ay}{c}} \Rightarrow \frac{\sqrt{a}+1}{2} \times \frac{c}{a}$$

$$\frac{c\sqrt{a}+c}{a} \quad \text{جواب:}$$



$$L^2 = x^2 + y^2 \rightarrow L = \sqrt{x^2 + y^2}$$

$$\varphi = \frac{\sqrt{a}+1}{2}$$

$$\frac{\sqrt{a}+1}{2}$$

$$\frac{c(\sqrt{a}+1)}{a}$$

$$\frac{L}{x} \rightarrow \varphi = \frac{\sqrt{x^2+y^2}}{x} \rightarrow \varphi^2 x^2 = x^2 + y^2 \rightarrow \varphi^2 = \left(\frac{y}{x}\right)^2 + 1$$

$$\therefore 1 - \varphi^2 = \left(\frac{y}{x}\right)^2 \rightarrow \frac{1}{\varphi^2 - 1} = \frac{1}{\left(\frac{y}{x}\right)^2} = \left(\frac{x}{y}\right)^2 \rightarrow \varphi = 1 - (1 + \varphi) = 1 - \varphi^2 \rightarrow \frac{1}{\varphi} = \left(\frac{x}{y}\right)^2$$

$$ka + \sqrt{ka^2 + ca} = r$$

$$\frac{a+1}{a} \rightarrow \frac{r}{a}$$

$$r - ka$$

$$a < \frac{r}{k}$$

$$(\sqrt{ka^2 + ca})^2 = (r - ka)^2$$

$$\frac{a+1}{a} \rightarrow \frac{\frac{r}{a} + \frac{r}{a}}{\frac{r}{a}} = \frac{r}{a}$$

$$ka^2 + ca = r^2 + 9a^2 - 12ka$$

$$a_1, a_2 = \frac{14 \pm \sqrt{14^2 - 11^2}}{14}$$

$$ka^2 - 12ka + c = 0$$

$$a_1, a_2 = \frac{14 \pm \sqrt{14^2 - 11^2}}{14} \rightarrow a_2 = \frac{14 - 11}{14} = \frac{3}{14} = \frac{r}{a}$$

$$\frac{\sqrt{x+1}}{\sqrt{x-1}+3} - \frac{\sqrt{x+1}}{3-\sqrt{x-1}} = \frac{x-1}{\sqrt{x-1}}$$

$$\sqrt{x-1} = t \rightarrow x = t^2 + 1$$

$$2^2 - 2 \cdot 2 + 7 \cdot 2 = 0$$

$$2 = 11 \pm 4\sqrt{3}$$

$$t = \sqrt{2} > 3 \Rightarrow 2 > 9$$

$$\left(\sqrt{t^2+1} \left(\frac{1}{t+3} - \frac{1}{3-t} \right) = t \right) \div t \Rightarrow \sqrt{t^2+1} \times \frac{-2}{(t+3)(3-t)} = 1$$

$$x = t^2 + 1 = 11 + 4\sqrt{3} + 1$$

$$x = 12 + 4\sqrt{3}$$

$$t^2 + 1 = \frac{(t^2 - 9)^2}{c} \Rightarrow c(2+t) = (2-9)^2$$

$$r - x = t$$

$$r - x = 0$$

$$r - x - 14 = 0$$

$$\frac{1}{\sqrt{r-x}+r} - \frac{1}{r-\sqrt{r-x}} = \frac{r-x}{\omega \sqrt{r-x}}$$

$$\frac{1}{\sqrt{t}+r} - \frac{1}{r-\sqrt{t}} = \frac{t}{\omega \sqrt{t}}$$

$$\omega \sqrt{t} (r - \sqrt{t}) - \omega \sqrt{t} (\sqrt{t} + r) = t(\sqrt{t} + r)(r - \sqrt{t})$$

$$10\sqrt{t} - \omega t - \omega t - 10\sqrt{t} = rt - t^2 \Rightarrow t^2 - 14t = 0 \Rightarrow t(t - 14) = 0$$

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

$$x=1 \text{ مرفوض } \\ x=0$$

$$\frac{140}{9} = \frac{x^2 + (1+x)^2}{x^2(1-x)^2} \Rightarrow -140x^4 + 220x^3 + 14x^2 - 4 = 0$$

$$y = \frac{1}{x} \text{ مرفوض }$$

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$$\sqrt{x + \sqrt{-x^3 + 6x^2 + 4x - 100}} + \sqrt{x^2 + \sqrt{-x^2 + 4x - 1}} = x + y$$

$$x = 4$$

$$-x^3 + 6x^2 + 4x - 100 \geq 0$$

$$-x^2 + 4x - 1 \geq 0$$

$$\rightarrow x \geq 2 \rightarrow -4 \leq 0 \text{ مرفوض}$$

$$x \in [2, 4]$$

$$\rightarrow x \geq 3 \rightarrow 0 \leq 0$$

$$1 \leq x \leq 4, \quad y \leq 4$$

$$\rightarrow x \geq 4 \rightarrow -4 \leq 4 \leq 100 - 100 \leq 0 \checkmark$$

$$\sqrt{4} = 2, \quad \sqrt{14} \geq 4$$

$$y + 4 = 4$$

دب جواب!

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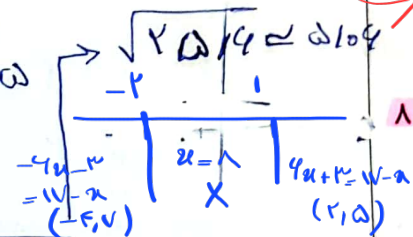
$$y = |x + 1| + |x - 1|, \quad y + x = 14, \quad y(y + 1) = 14 - x$$

$$\begin{cases} 1 - y & x < -1 \\ y & -1 \leq x < 1 \\ y + 1 & x > 1 \end{cases} \quad y = \frac{14 - x}{y}, \quad 4x + y = 14 - x$$

$$y = 14 - x, \quad y \geq 0$$

$$y(1 - y) = 14 - x$$

$$y - 4x = 14 - x, \quad A \quad x = -\frac{14}{3} = -4\frac{2}{3}, \quad y = 4\frac{4}{3}$$



$$y = \frac{14 - x}{y} \rightarrow 14 - x = y, \quad -1 \leq x < 1, \quad x = 1 \text{ مرفوض}$$

$$AB \geq \sqrt{(y + 1/1)^2 + (x - 4/4)^2} = \sqrt{4 + 4} = 2\sqrt{2}$$

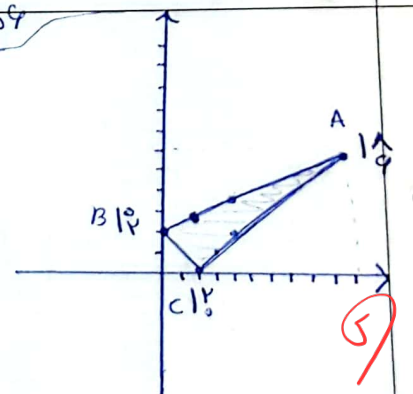
$$y = \sqrt{x^2 - 4x + 4}, \quad y = \frac{1}{x}x + y$$

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

$$y = |x - 2| \rightarrow \begin{cases} 1 \leq x < 2: y \leq x \Rightarrow y - x = \frac{1}{x}x + y \\ 2 \leq x < 4: y > x \end{cases}$$

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

$$S = \frac{1}{x} |A(y - 0) + 0(0 - 4) + 2(4 - y)| = \frac{1}{x} \times 4 = 14$$



$$9 - F \geq B, \quad \frac{1}{F} + \frac{1}{B} = 1$$

$$\frac{1}{F} = \frac{1}{B + 4} + \frac{1}{B} \rightarrow \frac{1}{F} = \frac{B + 4 + B}{B(B + 4)}$$

$$B^2 + 4B = 4B + 16$$

$$B^2 - 16 = 0 \rightarrow B = \pm \sqrt{16} = \pm 4 \rightarrow B_1 = 4, \quad B_2 = -4 \text{ مرفوض}$$

$$B_1 = \frac{4 + 4}{4} = 2$$

$$B_2 = \frac{4 - 4}{4} = 0 \text{ مرفوض}$$

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