

$$\frac{L}{w} = \frac{a}{f} \rightarrow L = \omega k, w = f k \Rightarrow S = 2 \cdot k^2$$

$$\frac{L'}{w \cdot f k} = \frac{\sqrt{a} + 1}{2} \rightarrow L' = 2 k (\sqrt{a} + 1) \rightarrow S' = 4 k^2 (\sqrt{a} + 1)$$

$$\frac{S'}{S} = \frac{4 k^2 (\sqrt{a} + 1)}{4 k^2} = \frac{2}{a} (\sqrt{a} + 1)$$

$$جیب \approx x, عرض \approx y \Rightarrow قفہ = \sqrt{x^2 + y^2}$$

$$\frac{\sqrt{x^2 + y^2}}{y} = \frac{\sqrt{a} + 1}{2} \rightarrow \frac{x^2 + y^2}{y^2} = \frac{2 + 2\sqrt{a}}{2} \xrightarrow{\text{درجہ اول}} \frac{x^2}{y^2} = \frac{1 + \sqrt{a}}{2}$$

$$\frac{y^2}{x^2} = \frac{2}{1 + \sqrt{a}} \times \frac{1 - \sqrt{a}}{1 - \sqrt{a}} \Rightarrow \frac{y^2}{x^2} = \frac{\sqrt{a} - 1}{2}$$

$$2a + \sqrt{4a^2 + 4a} = 2$$

$$\frac{a+1}{a} ?$$

$$\sqrt{4a^2 + 4a} = 2 - 2a \rightarrow 4a^2 + 4a = 4a^2 + 4 - 16a$$

$$4a^2 - 12a + 4 = 0 \xrightarrow{\div 4} a^2 - 3a + 1 = 0 \rightarrow (a-1)(a-2) = 0 \rightarrow \begin{cases} a = 2 \text{ غلط} \\ a = 1 \end{cases}$$

$$1 + \frac{1}{a} = 1 + \frac{1}{2} = \frac{3}{2}$$

$$\frac{\sqrt{x+1}}{\sqrt{x-1} + 3} - \frac{\sqrt{x+1}}{3 - \sqrt{x-1}} = \frac{x-1}{\sqrt{x-1}} \xrightarrow{\text{مخرج مشترک}} \frac{3\sqrt{x+1} - 2\sqrt{x^2-1} - 3\sqrt{x+1}}{1 - x} = \frac{x-1}{\sqrt{x-1}}$$

$$\frac{2\sqrt{x^2-1}}{x-1} = \frac{x-1}{\sqrt{x-1}} \xrightarrow{\text{طرفین درجہ اول}} (x-1)(\sqrt{x-1})^2 = 2\sqrt{x+1}(\sqrt{x-1})^2$$

$$\rightarrow 2\sqrt{x+1} = x-1 \xrightarrow{\text{دو طرفہ مربع}} 4x+4 = x^2 - 2x + 1 \rightarrow x^2 - 4x - 3 = 0$$

$$\rightarrow \Delta = 16 + 12 = 28 \rightarrow x = \frac{4 \pm \sqrt{28}}{2} \Rightarrow \frac{4 \pm 2\sqrt{7}}{2} = \begin{cases} 2 + \sqrt{7} \checkmark \\ 2 - \sqrt{7} \times \end{cases}$$

نیم خطی.

$$\sqrt{r-x} = t \rightarrow \frac{1}{t+r} - \frac{1}{r-t} = \frac{t^r}{\omega t} \xrightarrow{\omega \neq r} \frac{r-t-t-r}{r-t^2} = \frac{t^r}{\omega t} \quad (a)$$

$$\rightarrow \frac{-rt}{r-t^2} = \frac{t}{\omega} \leadsto r-t^2 = -1 \rightarrow t^2 = r+1 \leadsto r-x = r+1 \Rightarrow x = -1$$

که ر به سمت بیارد!

$$x = 0, \omega + t \Rightarrow \frac{1}{(0, \omega - t)^r} + \frac{1}{(0, \omega + t)^r} = \frac{14}{9} \quad \text{مخرج مشترک} \quad (c)$$

$$\rightarrow \frac{0, \omega + t^r - t + 0, \omega + t^r + t}{(0, \omega - t^r)^r} \rightarrow \frac{r(0, \omega + t^r)}{(0, \omega - t^r)^r} = \frac{14}{9} \rightarrow 32t^r - 194t^r + 11 = 0$$

$$|t^r = t'| \rightarrow 32t' - 194t' + 11 = 0 \quad \sqrt{\Delta} = 154 \rightarrow t' = \frac{194 \pm 154}{64} \rightarrow \begin{cases} t' = \frac{1}{16} \\ t' = \frac{11}{16} \end{cases}$$

$$\rightarrow \begin{matrix} t = \pm \frac{1}{r} \\ t = \sqrt{\frac{11}{r}} \end{matrix} \xrightarrow{x = 0, \omega + t} x = \frac{1}{r}, x = \frac{r}{r}, x = \sqrt{\frac{11}{r}} + \frac{1}{r}, x = -\sqrt{\frac{11}{r}} + \frac{1}{r}$$

$$S = \frac{1}{r} + \frac{r}{r} + \sqrt{\frac{11}{r}} + \frac{1}{r} - \sqrt{\frac{11}{r}} + \frac{1}{r} = 2$$

$$\text{دائره} \rightarrow -x^r + rx^r + r\omega - 1 \geq 0 \leadsto r - (x-r)(x-r\omega) \geq 0 \quad (v)$$

$$\begin{array}{c} -\omega \quad r \quad \omega \\ + \quad - \quad + \quad - \end{array} \leadsto D_1 = (-\infty, -\omega] \cup [r, \omega]$$

$$\rightarrow -x^r + rx - 1 \geq 0 \leadsto -(x-r)(x-r) \geq 0 \rightarrow \begin{array}{c} r \quad r \\ - \quad + \quad - \end{array} \leadsto D_r = [r, r]$$

PAPCO  $|D_1 \cap D_r| \rightarrow x = r \xrightarrow{\text{آزمون}} \sqrt{r+0} + \sqrt{1r+0} = r+r \checkmark \Rightarrow \text{جواب!}$

$$\boxed{x = r}$$

Subject

Date 15.4

نقطه میانی

$$y = \frac{14-x}{3} \rightarrow \frac{14-x}{3} = |x+2| + |x-1| \xrightarrow{x \geq 1} 14-x = 3(2x+1) \quad (1)$$

$$\rightarrow 14-x = 6 \rightarrow x=4 \rightarrow y=2$$

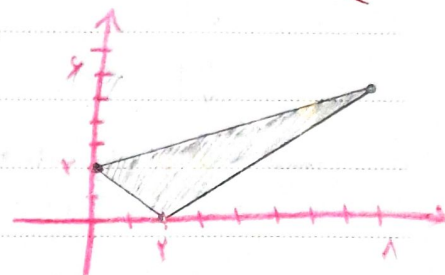
$$A \begin{vmatrix} 2 \\ 0 \end{vmatrix} B \begin{vmatrix} -1 \\ 5 \end{vmatrix} \rightarrow AB = \sqrt{(2+1)^2 + (0-5)^2} = \sqrt{34}$$

$$\textcircled{2} x \leq -2 \rightarrow 3(-x-1) = 14-x \rightarrow x = -5, y = 5$$

$$\sqrt{x^2 - 4x + 4} = \sqrt{(x-2)^2} = |x-2| \Rightarrow |x-2| = \frac{1}{2}x + 2 \quad (2)$$

$$\xrightarrow{x \geq 2} x-2 = \frac{1}{2}x + 2 \rightarrow \frac{1}{2}x = 4 \rightarrow x=8, y=1$$

$$\xrightarrow{x < 2} x-2 = -\frac{1}{2}x - 2 \rightarrow \frac{3}{2}x = -4 \rightarrow x = -\frac{8}{3}, y = \frac{10}{3}$$



$$S_{\Delta} = \frac{1}{2} \times \begin{vmatrix} 2 & 0 & 1 \\ 0 & 8 & 1 \\ -8 & 10 & 1 \end{vmatrix} = \frac{1}{2} (16 + 8 + 0 - 8 - 0 - 0) = \frac{1}{2} \times 16 = 8$$

$$\text{نقطه میانی} \rightarrow x = y - 4 \quad \text{نقطه میانی} \Rightarrow \frac{1}{x} + \frac{1}{x+9} = \frac{1}{2} \Rightarrow \frac{x+9+x}{(x+9)x} = \frac{1}{2} \quad (3)$$

$$2x + 18 = x^2 + 9x \rightarrow x^2 - 7x - 18 = 0 \rightarrow (x-9)(x+2) = 0$$

$$\rightarrow x = 9 \rightarrow \text{نقطه میانی} = 9, \text{نقطه میانی} = 13$$

$$\rightarrow x = -2 \rightarrow \text{نقطه میانی} = -2, \text{نقطه میانی} = 2$$