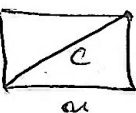


نام و نام خانوادگی کلاس پاسخنامه تشریحی تکلیف شماره ۱۸۱ بازرسی

$$\frac{x}{y} = \frac{\omega}{r} \quad \left\{ \begin{array}{l} \Rightarrow \frac{a}{a+1} = \frac{\omega}{r+2\sqrt{\omega}} \\ \frac{a+1}{y} = \frac{1+\sqrt{\omega}}{r} \end{array} \right. \quad \frac{S_{\text{میان}}}{S_{\text{پای}}} = \frac{(a+1)(y)}{(a)(y)} = \frac{a+1}{a} = \frac{r+2\sqrt{\omega}}{\omega}$$

 $C^2 = a^2 + y^2 \quad \frac{C}{a} = \frac{1+\sqrt{\omega}}{r} \Rightarrow C = \frac{a+a\sqrt{\omega}}{r}$

$$\rightarrow \left(\frac{a+a\sqrt{\omega}}{r} \right)^2 = a^2 + y^2 \Rightarrow \frac{a^2 + 2a^2\sqrt{\omega} + a^2\omega}{r^2} = a^2 + y^2$$

$$\rightarrow \frac{a^2 + a^2\sqrt{\omega}}{r} = y^2 \rightarrow \frac{a^2(1+\sqrt{\omega})}{r} = y^2 \Rightarrow \frac{a}{y^2} = \left(\frac{a}{y} \right)^2 = \frac{r}{1+\sqrt{\omega}}$$

$\sqrt{16a^2 + 9a} = 5 - 3a \quad ()^2 \rightarrow 16a^2 + 9a = 25 - 30a + 9a^2 - 15a \rightarrow 16a^2 - 14a + 25 = 0$

$a = 2 \quad 9 + 25 \neq 25 \quad X$, $a = \frac{2}{3} \quad \frac{9}{3} + \frac{1}{3} = 2 \quad \checkmark$

$\frac{a+1}{a} = \frac{\frac{2}{3}+1}{\frac{2}{3}} = \frac{\frac{5}{3}}{\frac{2}{3}} = \frac{5}{2} = \frac{r}{1+\sqrt{\omega}}$

$\frac{-2(\sqrt{a-1})(\sqrt{a+1})}{10-a} = \frac{a-1}{\sqrt{a-1}} \Rightarrow \frac{-2(\sqrt{a-1})(\sqrt{a+1})}{10-a} = \sqrt{a-1}$

$\rightarrow \frac{2\sqrt{a+1}}{r} < \begin{cases} 12+4\sqrt{3} \quad \checkmark \\ 12-4\sqrt{3} \quad (10 \times) \end{cases} \rightarrow \frac{-2\sqrt{a+1}}{r} = 10-a \quad ()^2 \rightarrow 4a+4 = 100+a^2-20a \rightarrow a^2-24a+96=0$

فقط یک ریشه ی مثبت دارد.

خرج مشترک $\frac{-2\sqrt{2-a}}{r+a} = \frac{2-a}{\omega\sqrt{2-a}} \quad \text{طرفین را ضرب کن} \rightarrow 2-a = -10(2-a)$

$\rightarrow a^2 + 10a - 22 = 0$

$(a-4)(a+12) = 0$

خرج مشترک $\frac{2-a}{\omega\sqrt{2-a}} = \frac{2-a}{\omega\sqrt{2-a}} \quad \text{خرج } a=2 \quad a=2, -12$

$$\frac{1}{a_1^2} + \frac{1}{(1-a_1)^2} = \frac{19}{9} \quad \times (a_1^2)(1-a_1)^2(a_1) \rightarrow 9(1-a_1)^2 + 9a_1^2 = 19(a_1^2)(1-a_1)^2$$

$$\Rightarrow 19a_1^2 - 38a_1^3 + 18a_1^4 + 18a_1 - 9 = 0$$

$$\rightarrow \text{تقریب : معادله} = \frac{-(-38)}{19} = 2$$

$$-a_1^2 + 9a_1 - 18 \geq 0 \rightarrow -(a_1 - 2)(a_1 - 9) \geq 0 \quad \frac{2}{-4+9} \rightarrow D_1: [2, 9]$$

$$(-a_1^2 + 9a_1^2) + (18a_1 - 18) \geq 0 \rightarrow -a_1^2(a_1 - 9) + 18(a_1 - 9) \rightarrow (a_1 - 9)(18 - a_1^2)$$

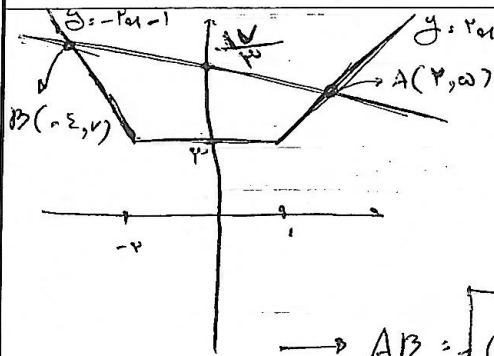
$$\Rightarrow D_1 \cap D_2: \{2\} \rightarrow \text{تنها عددی است} \rightarrow (a_1 - 9)(9 - a_1)(9 + a_1) \geq 0$$

$$a_1 = 2 \quad \sqrt{18} + \sqrt{18} = 2 + 2 \checkmark$$

مقادیر نقطه ای جواب دارد

$$\frac{-2 \pm \sqrt{4 - 4}}{1 + 1} = -1$$

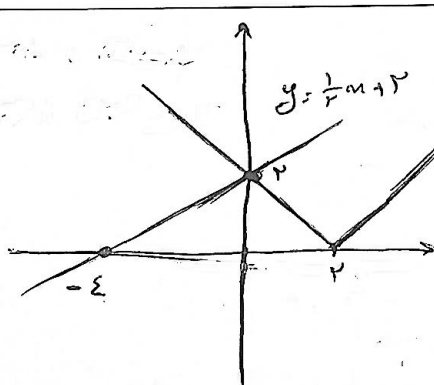
$$\rightarrow D_2: (-\infty, -2] \cup [2, \infty)$$



$$\begin{cases} y = 2x + 1 \\ y = 2x - 1 \end{cases} \Rightarrow \begin{cases} 2x + 1 = 2x + 1 \\ 2x - 1 = 2x - 1 \end{cases} \Rightarrow x = 2, y = 5 \Rightarrow A(2, 5)$$

$$\begin{cases} y = -2x - 1 \\ y = -2x + 1 \end{cases} \Rightarrow \begin{cases} -2x - 1 = -2x - 1 \\ -2x + 1 = -2x + 1 \end{cases} \Rightarrow x = -2, y = 1 \Rightarrow B(-2, 1)$$

$$\rightarrow AB = \sqrt{(2 - (-2))^2 + (5 - 1)^2} = \sqrt{40} = 2\sqrt{10}$$



$$y = \sqrt{x^2 - 4x + 4} = |x - 2|$$

$$\rightarrow \delta = \frac{2 \times 4}{2} = 4$$

مقدار a_1 است
مقدار $n+4$ است

$$\rightarrow \frac{1}{a_1} + \frac{1}{a_1 + 4} = \frac{1}{10} \Rightarrow a_1^2 - 31a_1 - 110 = 0$$

$$(a_1 - 35)(a_1 + 3) = 0$$

$$\rightarrow a_1 = 35$$