

نام و نام خانوادگی نام پاسخنانه تشریحی تکلیف شماره (۱۸۸). کلاس (۱۵۰).....

$$\frac{L}{w} = \frac{L}{r} = \frac{1+\sqrt{5}}{2} \Rightarrow L = r + r\sqrt{5} \rightarrow \frac{S'}{S} = \frac{r(1+\sqrt{5}) \times 4}{5 \times 4} = \frac{r + r\sqrt{5}}{5}$$

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$$L \rightarrow \text{طول} \quad w \rightarrow \text{عرض} \quad - \quad \text{تعداد} = \sqrt{L^2 + w^2}$$

$$\frac{\sqrt{L^2 + w^2}}{L} = \frac{1+\sqrt{5}}{2} \rightarrow \sqrt{L^2 + w^2} = \frac{L(1+\sqrt{5})}{2} \rightarrow L^2 + w^2 = \frac{L^2(1+\sqrt{5})^2}{4} = \frac{L^2(1+\sqrt{5})}{2}$$

$$\Rightarrow w^2 = \frac{L^2(1+\sqrt{5})}{2} - L^2 = \frac{L^2(1+\sqrt{5}-2)}{2} = \frac{L^2(\sqrt{5}-1)}{2} \rightarrow \frac{w^2}{L^2} = \frac{1+\sqrt{5}}{2} \Rightarrow \frac{L}{w} = \left(\frac{L}{w}\right)^2 = \frac{2}{1+\sqrt{5}}, \frac{\sqrt{5}-1}{2}$$

$$\Rightarrow \left(\frac{L}{w}\right)^2 = \frac{2(\sqrt{5}-1)}{2} = \frac{\sqrt{5}-1}{2}$$

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$$\sqrt{12a^2 + 4a} = r - 12a \Rightarrow 12a^2 + 4a = (r - 12a)^2 = r^2 - 24ar + 144a^2$$

$$\Rightarrow 12a^2 - 144a + 4a = 0 \rightarrow a^2 - 14a + 1 = 0 = (a-14)(a-1) \Rightarrow a = \frac{14}{5} = r, \frac{1}{5}$$

$$r \rightarrow \text{قوت} \quad , \quad \frac{r}{5} \rightarrow \text{در معادله صدق نمی‌کنند} \rightarrow \text{قوت}$$

$$\frac{a+1}{a} = \frac{\frac{1}{5} + \frac{1}{5}}{\frac{1}{5}} = \frac{\frac{2}{5}}{\frac{1}{5}} = \frac{2}{1}$$

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$$\sqrt{x+1} \left(\frac{r - \sqrt{x-1} - (\sqrt{x+1} + 3)}{1 - (x-1)} \right) = \sqrt{x+1} \left(\frac{-r - \sqrt{x-1}}{2-x} \right) = \frac{-(x-1)(\sqrt{x-1})}{x-1} \Rightarrow -r\sqrt{x+1} = 10 - x$$

$$\rightarrow r - \sqrt{x-1} \neq 0 \rightarrow x \neq 10, \quad \sqrt{x-1} \neq 0 \rightarrow x \neq 1$$

$$\rightarrow \# : 4x+4 = 100 + x^2 - 6x \rightarrow x^2 - 10x + 96 = 0 \rightarrow \Delta = 100 - 384 = -284 \Rightarrow x = \frac{10 \pm \sqrt{-284}}{2} = 5 \pm \sqrt{-71}$$

$$\rightarrow \# : -r\sqrt{x+1} = 10 - x \rightarrow 10 - x \leq 0 \Rightarrow x \geq 10 \Rightarrow 12 \leq \sqrt{13}$$

$$\Rightarrow x = 12 + 12\sqrt{13} \rightarrow \text{یک جواب مثبت}$$

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$$\frac{r - \sqrt{r-x} - (\sqrt{r-x} + 2)}{r - (r-x)} = \frac{-r - \sqrt{r-x}}{r+x} = \frac{(r-x)(\sqrt{r-x})}{r+x} \Rightarrow r+x = -10 \rightarrow x = -12$$

$$r-x > 0 \rightarrow x < r \rightarrow x = -12 \quad \text{قوت}$$

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ریشه‌ی مثبت ندارد.

$$\frac{1}{x^2} + \frac{1}{(1-x)^2} = \frac{(1-x)^2 + x^2}{(x(1-x))^2} = \frac{14}{9} = \frac{(1+x^2-2x)+x^2}{(x(1-x))^2} = \frac{1+2x^2-2x}{(x(1-x))^2} = \frac{1-2(x-x^2)}{(x-x^2)^2}$$

$$\rightarrow x-x^2=t \rightarrow \frac{1-2t}{t^2} = \frac{14}{9} \Rightarrow 9-14t = 14t^2 \rightarrow 14t^2+14t-9=0 \rightarrow t^2+14t-9(140) \rightarrow$$

$$= (t+14)(t-9) \Rightarrow t = \frac{-14}{140} = \frac{-1}{10}, t = \frac{9}{140} = \frac{9}{14}$$

$$\begin{cases} x-x^2 = \frac{-1}{10} \rightarrow x^2-x-\frac{1}{10}=0 \rightarrow \Delta > 0 \\ x-x^2 = \frac{9}{14} \rightarrow x^2-x+\frac{9}{14}=0 \rightarrow \Delta < 0 \end{cases} \rightarrow \begin{cases} \text{مجموع ریشه‌ها} = 1 \\ \text{ضرب ریشه‌ها} = -\frac{1}{10} \end{cases}$$

$$-x^2+4x-1 \geq 0 \Rightarrow x^2-4x+1 \leq 0 \Rightarrow (x-2)(x-2) \leq 0 \rightarrow x \in [2, 2]$$

$$-x^2+6x^2+20x-100 = -x^2(x-2)+20(x-2) = (x-2)(20-x^2) = (x-2)(5-x)(5+x)$$

$$(x-2)(5-x)(5+x) \geq 0 \Rightarrow \frac{-5 \quad 2 \quad 5}{+ \quad - \quad +} \Rightarrow x \in (-\infty, -5] \cup [2, 5]$$

$$\text{مجموع درادیکال} \rightarrow \text{همه ریشه‌ها} \Rightarrow 2+2 \geq 0 \Rightarrow 2 \geq -2 \rightarrow x \in [-2, +\infty) \Rightarrow$$

$$\text{اشتراک دایره‌ها} \rightarrow \{2\} \rightarrow \sqrt{5} + \sqrt{(2)^2} = 2+5=7 = x+2=7 \rightarrow \text{مصدق می‌شود} \rightarrow \text{تعداد جواب: } (1)$$

$$x > 1 \rightarrow x+2+x-1 = 2x+1 = y \rightarrow 3y = 9x+3 \Rightarrow 4x+3 = 15-x \rightarrow 5x = 12 \rightarrow x = \frac{12}{5} \rightarrow y = \frac{14}{5} = \omega \quad A(2, \omega)$$

$$-2 \leq x \leq 1 \rightarrow x+2+1-x = 3 = y \rightarrow 3y = 9 \rightarrow 9 = 15-x \rightarrow x = 6 \quad \text{غیرممکن}$$

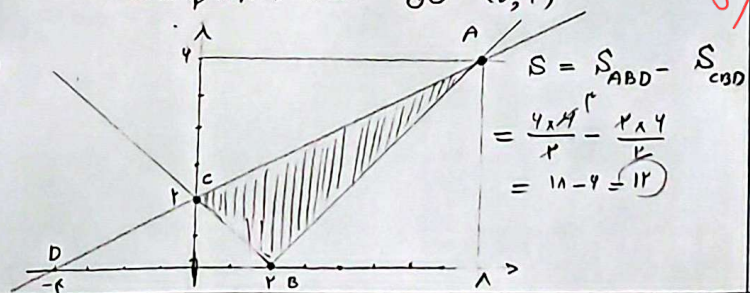
$$x < -2 \rightarrow -2-x+1-x = -2x-1 = y \rightarrow 3y = -6x-3 = 15-x \rightarrow -20 = 5x \rightarrow x = -4 \quad \text{غیرممکن} \rightarrow y = \frac{11}{5} = v \quad B(-4, v)$$

$$AB = \sqrt{(4)^2 + (7)^2} = \sqrt{16+49} = \sqrt{65} = 2\sqrt{10}$$

$$y = \sqrt{x^2-4x+4} = \sqrt{(x-2)^2} = |x-2| < \begin{cases} x > 2 \rightarrow x-2 = \frac{1}{x}x+2 \rightarrow \frac{1}{x}x = 4 \rightarrow x = 4 \quad \text{ق ق } (4, 4) \\ x < 2 \rightarrow 2-x = \frac{1}{x}x+2 \rightarrow x = 0 \quad \text{ق ق } (0, 2) \end{cases}$$

$$\begin{cases} \text{در نقطه } (2, 0) \text{ مماس را قطع می‌کند} \\ \text{مقدار } |x-2| \end{cases}$$

$$\begin{cases} \text{در نقطه } (-4, 0) \text{ مماس را قطع می‌کند} \\ \text{مقدار } \frac{1}{x}x+2 = 0 \rightarrow x = -4 \end{cases}$$



$$\text{در مساحت: } \frac{1}{x}$$

$$\text{در مساحت: } \frac{1}{x+4}$$

$$\text{مجموع: } \frac{1}{x} + \frac{1}{x+4} = \frac{1}{x} = \frac{x+4}{x^2+4x} = \frac{1}{x}$$

$$\rightarrow 6x+110 = x^2+4x \rightarrow x^2-2x-110 = (x-14)(x+8) = 0 \rightarrow x = 14 \quad \text{مساحت}$$