نام و نام خانوادگی ....هلیا فردوس.... پاسخنامه تشریحی تکلیف شماره ..۱۸.. کلاس ....[illegible]....

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$\frac{x}{y} = \frac{5}{4}$ ، $\frac{x'}{y} = \frac{1+\sqrt{5}}{2} \to x' = \frac{(1+\sqrt{5})y}{2} \to S' = y \times \frac{(1+\sqrt{5})y}{2}$ y $\boxed{}^{x}$

$y^2\left(\frac{1+\sqrt{5}}{2}\right)$ ، $S = \frac{5}{4} y \times y = \frac{5y^2}{4}$ $\qquad \frac{\left(\frac{1+\sqrt{5}}{2}\right)\cancel{y^2}}{\frac{5\cancel{y^2}}{4}} = \frac{2+2\sqrt{5}}{5}$

2×4

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$y \big/ x$ $\to x\sqrt{x^2+y^2}$ $\quad \frac{\sqrt{x^2+y^2}}{x} = \frac{1+\sqrt{5}}{2} \to \frac{x^2+y^2}{x^2} = \frac{6+2\sqrt{5}}{4} \to$

$4x^2 + 4y^2 = x^2 + 5x^2 + 2\sqrt{5}x^2 \to 4y^2 = (2+2\sqrt{5})x^2 \to y^2 = \frac{(1+\sqrt{5})}{2}x^2$

$\frac{x^2}{y^2} = \frac{\cancel{x^2}}{\frac{1+\sqrt{5}}{2}\cancel{x^2}} = \frac{2}{1+\sqrt{5}} \times \frac{1-\sqrt{5}}{1-\sqrt{5}} = \frac{\sqrt{5}-1}{2}$

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$3a + \sqrt{2a^2+3a} = 2 \to \sqrt{2a^2+3a} = 2-3a \to$ به توان ۲ $\to 2a^2+3a = 9a^2+4-12a \to$

$7a^2 - 14a + 4 = 0 \to a^2 - 14a + 28 = 0 \to (a-14)(a-2) = 0 \quad a = \frac{14}{7}, \frac{2}{7} = 2, \frac{2}{7}$

$a = 2 \to 6 + \sqrt{8+8} = 2 \to 10 \neq 2$ غلط $\to a = \frac{2}{7} \to \frac{a+1}{a} = 1 + \frac{7}{2} = \frac{9}{2}$

$\frac{9}{2} = 4.5$

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$\sqrt{x-1}^{\,2}$

$\frac{\sqrt{x+1}}{\sqrt{x-1}+3} - \frac{\sqrt{x+1}}{3-\sqrt{x-1}} = \frac{x-1}{\sqrt{x-1}} \to \frac{(3-\sqrt{x-1})(\sqrt{x+1}) - (3+\sqrt{x-1})(\sqrt{x+1})}{9-x+1} = \sqrt{x-1}$

$\frac{\cancel{3\sqrt{x+1}} - \sqrt{x^2-1} - \cancel{3\sqrt{x+1}} - \sqrt{x^2-1}}{10-x} = \sqrt{x-1} \quad \frac{-2\sqrt{x+1} \times \cancel{\sqrt{x-1}}}{10-x} = \cancel{\sqrt{x-1}}$

$-2\sqrt{x+1} = 10 - x \to x - 10 - 2\underbrace{\sqrt{x+1}}_{t} = 0 \to t^2 - 1 - 10 - 2t = 0 \to t^2 - 2t - 11 = 0 \to t = \frac{2 \pm \sqrt{5}}{2a} \to \frac{2+\sqrt{5}}{2a}$ ✓

$\frac{2+\sqrt{5}}{2a} = \sqrt{x+1} \to$ پس جواب دارد

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$\frac{1}{\sqrt{2-x}+2} - \frac{1}{2-\sqrt{2-x}} = \frac{2-x}{5\sqrt{2-x}} \to \frac{\cancel{2} - \sqrt{2-x} \cancel{- 2} - \sqrt{2-x}}{4-2+x} = \frac{2-x}{5\sqrt{2-x}}$

$\frac{-2\cancel{\sqrt{2-x}}}{x+2} = \frac{(\cancel{\sqrt{2-x}})^2}{5\cancel{\sqrt{2-x}}} \to -10 = x + 2 \to x = -12 \to$ ریشه مثبت ندارد

$$\frac{1}{x^2}+\frac{1}{(1-x)^2}=\frac{160}{9} \qquad \Big(\underbrace{\frac{1}{x}+\frac{1}{1-x}}_{\frac{1-x+x}{-x(x-1)}=\frac{1}{x(1-x)}}\Big)^2-\frac{2}{x(1-x)}=\frac{160}{9} \qquad \frac{1}{x(1-x)}=t$$

$$t^2-2t=\frac{160}{9} \xrightarrow{+1} t^2-2t+1=\frac{169}{9} \to (t-1)^2=\left(\frac{13}{3}\right)^2 \to t-1=\pm\frac{13}{3}$$ ۶

$$t-1=\frac{-13}{3} \qquad t=\frac{16}{3} \Rightarrow \frac{1}{x-x^2}=\frac{16}{3} \to 3=16x-16x^2 \to 16x^2-16x+3=0 \to \frac{-b}{a}=\frac{16}{16}$$

$1+1=2$ مجموع جواب‌ها $$t=\frac{-10}{3} \Rightarrow \frac{1}{x-x^2}=\frac{-10}{3} \to 3=-10x+10x^2 \to 10x^2-10x-3=0 \to \frac{-b}{a}=\frac{10}{10}=1$$

$$\sqrt{x+\sqrt{-x^3+4x^2+25x-100}}+\sqrt{x^2+\sqrt{-x^2+6x-8}}=x+2 \qquad \underbrace{-x^3+4x^2}_{x^2}\underbrace{+25x-100}_{25}$$

$$x^2(4-x)-25(4-x)\geq 0 \to (4-x)(x^2-25)\geq 0 \qquad \begin{array}{ccccccc} & -5 & & 4 & & 5 & \\ + & & - & & + & & - \end{array} \quad (1)$$

$$-x^2+6x-8\geq 0 \to x^2-6x+8\leq 0 \to (x-4)(x-2)\leq 0 \qquad \begin{array}{ccccc} & 2 & & 4 & \\ + & & - & & + \end{array} \quad (2)$$ ۷

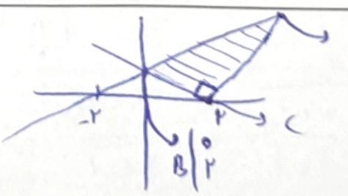
$(1)\cap(2)=\{4\}$ → به ازای ۴ ثبت می‌شود ⇒ $x=4$ یک جواب دارد

$$y=|x+2|+|x-1| \qquad 3y+x=17 \to |x+2|+|x-1|=\frac{17-x}{3}$$

$$3|x+2|+3|x-1|-17+x=0 \to \begin{array}{c|c|c} & -2 \quad\quad 1 & \\ -5x-20 & x-8 & 7x-14 \\ x=-4\checkmark & x=8\times & x=2\checkmark \end{array} \to \begin{array}{c|c} x & 2 \\ y & 5 \end{array} \quad \begin{array}{|c} -4 \\ 7 \end{array}$$ ۸

$$AB=\sqrt{(2+4)^2+(5-7)^2}=2\sqrt{10}$$

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



$$x-2=\frac{1}{2}x+2 \to x=8,\ y=6 \quad x\geq 2\checkmark$$

$$2-x=\frac{1}{2}x+2 \to x=0,\ y=2 \to x\leq 2\checkmark$$ ۹

$$BC=\sqrt{4+4}=\sqrt{8} \ , \ AC=\sqrt{36+36}=6\sqrt{2} \qquad \frac{2\sqrt{2}\times 6\sqrt{2}}{2}=12$$

روز → x ، روز = $x+9$ → $\frac{1}{x}+\frac{1}{x+9}=\frac{1}{20}$ ، $\frac{x+9+x}{x^2+9x}=\frac{1}{20}$

$$(2x+9)20=x^2+9x \qquad 40x+180=x^2+9x \to x^2-31x-180=0$$ ۱۰

$$(x-36)(x+5)=0$$

$x=36$ → روز → $36\,h$