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

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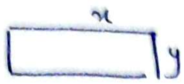
$\frac{x}{y}=\frac{5}{4}$ $\qquad$ $\frac{x+t}{y}=\frac{1+\sqrt{5}}{2}$



$\frac{S'}{S}=\frac{(x+t)y}{xy}=\frac{(x+t)}{y}\times\frac{y}{x}=\frac{1+\sqrt{5}}{2}\times\frac{4}{5}=\frac{2}{5}(1+\sqrt{5})$

$=\frac{2}{5}+\frac{2}{5}\sqrt{5}$

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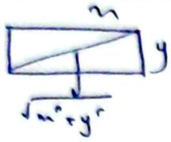

$\frac{\sqrt{x^2+y^2}}{x}=\frac{1+\sqrt{5}}{2}\xrightarrow{\text{به توان ۲}}\frac{x^2+y^2}{x^2}=\frac{\overset{6+2\sqrt{5}}{\cancel{1+5+2\sqrt{5}}}}{4}$

$\rightarrow 1+\frac{y^2}{x^2}=\frac{3+\sqrt{5}}{2}-1\rightarrow\frac{y^2}{x^2}=\frac{1+\sqrt{5}}{2}\rightarrow\frac{x^2}{y^2}=\frac{2}{1+\sqrt{5}}=\frac{2-2\sqrt{5}}{-4}$

$=\frac{-1}{2}+\frac{\sqrt{5}}{2}$

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$3a+\sqrt{2a^2+4a}=2$ $\qquad$ $a\le -2$, $a\ge 0$

$\sqrt{2a^2+4a}=2-3a\rightarrow 2a^2+4a=9a^2+4-12a\rightarrow 7a^2-16a+4=0$ $\quad a=\frac{2}{7}$ یا 2

$a=2\rightarrow 6+\sqrt{8+8}=6+4=10$ ✗

$a=\frac{2}{7}\rightarrow\frac{6}{7}+\sqrt{\frac{8}{49}+\frac{8}{7}}=2$ ✓ $\rightarrow a=\frac{2}{7}$ $\qquad \frac{a+1}{a}=\frac{\frac{2}{7}+1}{\frac{2}{7}}=\frac{\frac{9}{7}}{\frac{2}{7}}=\boxed{\frac{9}{2}}$

۴

$\frac{\sqrt{x+1}}{\sqrt{x-1}+3}-\frac{\sqrt{x+1}}{3-\sqrt{x-1}}=\frac{x-1}{\sqrt{x-1}}\rightarrow\sqrt{x+1}\left(\frac{3-\sqrt{x-1}-\sqrt{x-1}-3}{9-x+1}\right)=\sqrt{x-1}$

$\rightarrow\sqrt{x+1}\left(\frac{-2\cancel{\sqrt{x-1}}}{10-x}\right)=\cancel{\sqrt{x-1}}\xrightarrow{x\neq 1}-2\sqrt{x+1}=10-x$ $\qquad x\ge 1$ ✓

$\rightarrow 4x+4=x^2-20x+100\rightarrow x^2-24x+96=0\rightarrow x=\frac{24\pm\sqrt{24^2-4\times 96}}{2}=12\pm 4\sqrt{3}$ → ۲ ریشه درسته؟

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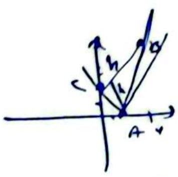
$\sqrt{2-x}=t$

$\frac{1}{t+2}-\frac{1}{2-t}=\frac{t^2}{5t}\rightarrow\frac{\overset{-2t}{\cancel{2-t-t-2}}}{4-t^2}=\frac{t}{5}\rightarrow -10\cancel{t}=4-t^2$

$\rightarrow t^2=14\rightarrow t=\pm\sqrt{14}\rightarrow\sqrt{2-x}=\sqrt{14}\rightarrow 2-x=14\rightarrow x=-12$ ✓ $\qquad$ ۱ ریشه

$x(1-x)=x-x^2=t \quad , \quad x\neq ۱,۰$ $x^2+(1-x)^2=1-2x+2x^2=1-2t$ $\frac{1-2t}{t^2}=\frac{۱۶۰}{۹} \to ۱۶۰t^2+۱۸t-۹=0 \to (t+\frac{۴۸}{۱۶۰})(t-\frac{۳۰}{۱۶۰})=0 \to t=\frac{۳}{۱۶} , -\frac{۳}{۱۰}$ $x^2-x+\frac{۳}{۱۶}=0 \to x=\frac{1\pm\sqrt{y}}{2}=\frac{1\pm\sqrt{y}}{2}$ $x^2-x-\frac{۳}{۱۰}=0 \to x=\frac{1\pm\sqrt{x}}{2}=\frac{1\pm\sqrt{x}}{2}$ $S=\frac{1+\sqrt{x}+1-\sqrt{x}+1+\sqrt{y}+1-\sqrt{y}}{۲}=\frac{۴}{۲}=۲$	۶
$\sqrt{x+\sqrt{-x^4+4x^2+25x-100}}+\sqrt{x^2+\sqrt{-x^2+6x-8}}=x+2$ $-x^2(x^2-4)+25(x-4)$ $\qquad$ $-(x-2)(x-4)$ $=(x^2-4)(25-x^2)=(x-4)(5-x)(5+x)$ $\qquad$ ۲ ۴ : − + − −۵ ۴ ۵ : + − + − طبق جدول تعیین علامت $\xrightarrow{x=4}$ $2+4=4+2$ ✓ تنها جواب $x=4$	۷
−۲ ۱ : $-2x-1$ | ۳ | $2x+1$ $\qquad$ $3y+x=17 \to y=-\frac{x}{3}+\frac{17}{3}$ $-\frac{x}{3}+\frac{17}{3}=3 \to -x+17=9 \to x=8$ غ ق ق $-\frac{x}{3}+\frac{17}{3}=2x+1 \to -x+17=6x+3 \to 7x=14 \to x=2$ ✓ $\to \begin{vmatrix}2\\5\end{vmatrix}$ $-\frac{x}{3}+\frac{17}{3}=-2x-1 \to x=-4$ ✓ $\to \begin{vmatrix}-4\\7\end{vmatrix}$ $\qquad$ $AB:\sqrt{36+4}=\sqrt{40}=2\sqrt{10}$	۸
$y=\|x-2\|$ $\qquad$ ۲ : $2-x$ | $x-2$ $y=\frac{1}{2}x+2$  $x-2=\frac{1}{2}x+2 \to \frac{1}{2}x=4 \to x=8 \to \begin{vmatrix}8\\6\end{vmatrix}$ $2-x=\frac{1}{2}x+2 \to \frac{3}{2}x=0 \to x=0 \to \begin{vmatrix}0\\2\end{vmatrix}$ $\qquad$ $S=\frac{BC\cdot h}{2}=\frac{\cancel{4}\times 6\times\cancel{5}}{\cancel{5}\times\cancel{2}}=12$ $h=\frac{\|1+2\|}{\sqrt{1+\frac{1}{4}}}=\frac{3\times 2}{\sqrt{5}}=\frac{6\sqrt{5}}{5}$ $\qquad$ $BC=\sqrt{64+16}=\sqrt{80}=4\sqrt{5}$	۹
[illegible] $\to x$ $\qquad$ فرهاد $\to x+9$ $\frac{1}{x}+\frac{1}{x+9}=\frac{1}{20} \to (2x+9)20=x^2+9x \to x^2-31x-180=0$ $40x+180$ $x=36 , -5$ غ ق ق	۱۰