نام و نام خانوادگی ....هستی ...... پاسخنامه تشریحی تکلیف شماره ..۱۸.. کلاس ..یازدهم ریاضی A..........

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$\boxed{}_{x}\, y \rightarrow \frac{x}{y} = \frac{5}{4} \; : \; \frac{x_2}{y} = \frac{1+\sqrt{5}}{2} \quad : \quad \frac{S_2}{S_1} = ?$

$$\frac{S_2}{S_1} = \frac{x_2 y}{x_1 y} = \frac{y\left(\frac{1+\sqrt{5}}{2}\right)}{y\left(\frac{5}{4}\right)} = \frac{2+2\sqrt{5}}{5}$$

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$\boxed{z}_{x}\, y \; : \; \frac{z}{x} = \frac{1+\sqrt{5}}{2} \Rightarrow \left(\frac{x}{y}\right)^2 = ?$

$\rightarrow z = \frac{1+\sqrt{5}}{2} x \quad : x^2+y^2 = \cancel{z^2} \left(\frac{1+\sqrt{5}}{2}\right)^2 x^2 \Rightarrow y^2 = x^2\left(\left(\frac{1+\sqrt{5}}{2}\right)^2 - 1\right)$

$\frac{6+2\sqrt{5}}{4} = \frac{3+\sqrt{5}}{2} - 1 = \frac{1+\sqrt{5}}{2}$

$$\Rightarrow \frac{x^2}{y^2} = \frac{x^2}{x^2\left(\frac{1+\sqrt{5}}{2}\right)} = \frac{2}{1+\sqrt{5}} \xrightarrow{\text{گویا}} \frac{2\sqrt{5}-2}{4} = \frac{\sqrt{5}-1}{2}$$

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$3a + \sqrt{2a^2+4a} = 2 \rightarrow \frac{a+1}{a} = ?$

$\Rightarrow \underbrace{\sqrt{2a^2+4a}}_{\geq 0} = \underbrace{2-3a}_{\geq 0} \Rightarrow 2-3a \geq 0 \qquad a < \frac{2}{3}$

$(\;)^2 : 2a^2+4a = 4-12a+9a^2 \rightarrow \cancel{7}a^2 - 16a + \cancel{4}^{28} = 0$

$(a-14)(a-2) = 0$

$\rightarrow a = 2, 14 \xrightarrow{\div 7} a = \frac{2}{7}, \frac{2}{7}$

$\frac{2}{7}$ ✓ ، ۲ غ ق ق

$$\Rightarrow \frac{a+1}{a} = \frac{7\left(\frac{9}{\cancel{7}}\right)}{2} = 4{,}5$$

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$\frac{\sqrt{x+1}}{\sqrt{x-1}+3} - \frac{\sqrt{x+1}}{3-\sqrt{x-1}} = \frac{x-1}{\sqrt{x-1}} \; : \; x>0$? تعداد

$\rightarrow x \neq 10 \; , \; x \geq 1$

$\sqrt{x+1}\left(\frac{\cancel{3} - \sqrt{x-1} - \cancel{3} - \sqrt{x-1}}{10-x}\right) = \frac{-2\sqrt{x-1}}{10-x} = \frac{x-1}{\sqrt{x-1}} \rightarrow -2(x-1) = -x^2+9x-10$

$\Rightarrow -2x+2 = -x^2+9x-10 \; : \; x^2-11x+12 = 0$

$\rightarrow \Delta = b^2-4ac : 121-48 = 73 > 0 \rightarrow$

$\frac{11 \pm \sqrt{73}}{2} \rightarrow \frac{11+\sqrt{73}}{2} ✓ > 0$

$\rightarrow \frac{11-\sqrt{73}}{2} ✓ > 0 \quad \Rightarrow$ ۲ ریشه مثبت دارد

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؟ تعداد ریشه مثبت

$\frac{1}{\sqrt{2-x}+2} - \frac{1}{2-\sqrt{2-x}} = \frac{2-x}{5\sqrt{2-x}} \Rightarrow \frac{1}{t+2} - \frac{1}{2-t} = \frac{t^2}{5t} \; : \; \frac{\cancel{2}-t-t-\cancel{2}}{t^2-4} = \frac{-2t}{t^2-4} = \frac{t^2}{5t}$

$x \leq 2$

$\Rightarrow -10 = t^2-4 \rightarrow t^2 = -6 \Rightarrow$ غ ق ق $\Rightarrow$ به ازای هیچ مقدار مثبتی از x معادله جواب ندارد!

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$\frac{1}{x^2}+\frac{1}{(1-x)^2}=\frac{170}{9} : \frac{(1-x)^2+x^2}{x^2(1-x)^2}=\frac{2x^2-2x+1}{(x-x^2)^2}=\frac{170}{9} : \frac{2(x^2-x)+1}{(x^2-x)^2}=\frac{170}{9} \rightarrow t=x^2-x$

$x^2(1-x)^2 \rightarrow (x-x^2)^2$

$\Rightarrow 18t+9=170t^2 : 170t^2-18t-9=0 \quad (9\times170) \quad : (t-51)(t+30)=0 \rightarrow t=-30, 51 \xrightarrow{\div 170} \frac{3}{10}, \frac{-3}{17}$

$\Rightarrow \begin{cases} t=0.3 : x^2-x=0.3 \xrightarrow{\Delta>0} x^2-x-0.3=0 \rightarrow S=\frac{-b}{a}=1 \\ t=\frac{-3}{17} : x^2-x+\frac{3}{17}=0 \rightarrow \Delta>0 : S=1 \end{cases} \Rightarrow 1+1=2$

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

$x^2(4-x)-25(4-x)\geq 0$
$\Rightarrow (4-x)(x^2-25)\geq 0$
4 ریشه، ±5 ریشه

-5	4	5
$+$	$-$	$+$	$-$

$\Rightarrow -x^2+6x-8\geq 0$
$\rightarrow x^2-6x+8\leq 0$
$(x-4)(x-2)$
ریشه 4، ریشه 2

2	4
$+$	$-$	$+$

$\overset{\cap}{\Rightarrow} \{4\} \Rightarrow x=4$

$\Rightarrow \sqrt{4}+\sqrt{16}=6$ ✓ $\Rightarrow$ جواب

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1) $y=|x+2|+|x-1|$ (ریشه -2، ریشه 1)
2) $3y+x=17$
$\Rightarrow$ d AB = ? $\rightarrow y_1 \Rightarrow$

	-2		1	
$-2x-1$		3		$2x+1$

$\rightarrow y=\frac{17-x}{3}$

$x\geq 1 \Rightarrow 3(2x+1)=17-x : 6x+3=17-x : 7x=14 \rightarrow x=2$ ✓

$-2<x<1 \Rightarrow 9=17-x \rightarrow x=8$ ✗ غ ق ق

$x\leq -2 \Rightarrow 3(-2x-1)=17-x : -6x-3=17-x : 5x=-20 \rightarrow x=-4$ ✓

$: A, B : (2,5), (-4,7)$

$\Rightarrow d=\sqrt{36+4}=\sqrt{40}=2\sqrt{10}$

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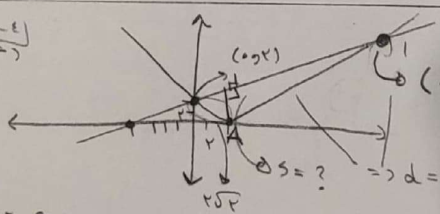
$y_1=\sqrt{x^2-4x+4}, \quad y=\frac{1}{2}x+2 \rightarrow y=0 \rightarrow x=-4$

$(x-2)^2 \Rightarrow y=|x-2| :$

	2	
$2-x$		$x-2$



$\Rightarrow d=\sqrt{64+16}=\sqrt{80}=4\sqrt{5}$

$\Rightarrow x\geq 2 : x-2=\frac{1}{2}x+2 : \frac{1}{2}x=4 \rightarrow x=8, y=6$

$\Rightarrow S=\frac{4\sqrt{5}\times\frac{6\sqrt{5}}{5}}{2}=12$

$\rightarrow A(2,0), \quad y-\frac{1}{2}x-2=0$

$AH \Rightarrow \frac{|1-1-2|}{\sqrt{1+\frac{1}{4}}}=\frac{3}{\frac{\sqrt{5}}{2}}=\frac{6\sqrt{5}}{5}$

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B F $t=?$

$t \quad t+9 : \frac{1}{t}+\frac{1}{t+9}=\frac{1}{20} : 20(2t+9)=t^2+9t : t^2+t(9-40)-180=0$

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

$t=\cancel{-5}, 36$ غ ق ق

$\Rightarrow$ بیژن به تنهایی در ۳۶ ساعت!