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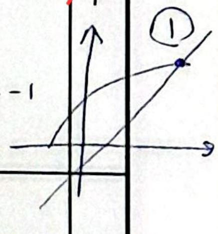
نام و نام خانوادگی ......پارسا [illegible]...... پاسخنامه تشریحی تکلیف شماره ....۱۸.... کلاس ......[illegible]......

۱	$x \times y$ ، $(x-1)\times(y+2)$ $\frac{y}{x}=\frac{5}{4} \to \frac{y+z}{x}=\frac{5+z}{4}=\frac{1+\sqrt5}{2}$ $\to 10+2z=4+4\sqrt5 \Rightarrow 2z=4(1+\sqrt5)-10$ $z=2(1+\sqrt5)-5$ $\frac{S_2}{S_1}=\frac{x(y+z)}{xy}=\frac{4(5+2+2\sqrt5-5)}{20}=\frac{8(1+\sqrt5)}{20}=\frac{2(1+\sqrt5)}{5}$	۴
۲	$\frac{\sqrt{x^2+y^2}}{y}=\frac{1+\sqrt5}{2} \to 2\sqrt{x^2+y^2}=y(1+\sqrt5) \to 4x^2+4y^2=y^2(1+\sqrt5)^2$ $\to 4x^2=y^2+5y^2+2\sqrt5y^2-4y^2 \to 4x^2=2y^2(1+\sqrt5)$ $\frac{2}{1+\sqrt5}$ = جذر $\to \sqrt{\frac{2}{1+\sqrt5}}=\frac{y}{x}$	۴
۳	$2a+\sqrt{3a^2+4a}=2 \to \sqrt{3a^2+4a}=2-3a$ $\to 3a^2+4a=9a^2+4-12a \to 7a^2-14a+4 \to a^2-14a+28$ ، $\frac{14}{7}=2$ ، $\frac{2}{7}$ قق ✓ $3a(a+2)\geq 0$ $\quad \begin{array}{c} -2 \quad 0 \\ + \mid - \mid + \end{array} \to 2\geq 3a \to \frac{2}{3}\geq a$ $\frac{\frac{2}{7}+1}{\frac{2}{7}}=\frac{9}{2}$ ✓	۴
۴	$\frac{\sqrt{x+1}}{\sqrt{x-1}+3}-\frac{\sqrt{x+1}}{3-\sqrt{x-1}}=\frac{x-1}{\sqrt{x-1}}$ $\quad x\geq -1,\ x\geq 1$ $\quad \frac{3\sqrt{x+1}-2\sqrt{x^2-1}-3\sqrt{x+1}}{9-x+1}=\sqrt{x-1}$ $\frac{2\sqrt{x-1}\sqrt{x+1}}{x-10}=\sqrt{x-1} \to \frac{2\sqrt{x+1}}{x-10}=1 \to 2\sqrt{x+1}=x-1$ 	۴
۵	$\frac{1}{\sqrt{2-x}+2}+\frac{1}{\sqrt{2-x}-2}=\frac{\sqrt{2-x}}{5} \to \frac{2\sqrt{2-x}}{2-x+(-4)}=\frac{\sqrt{2-x}}{5}$ $10=-x-2 \to x=-12$ ∝ جواب حقیقی ۲	۴

$$\frac{2(x^2-x)+1}{(x-x^2)^2}=\frac{140}{9} \qquad \frac{2t+1}{t^2}=\frac{140}{9}$$

$$\frac{1}{x^2}+\frac{1}{(1-x)^2}=\frac{140}{9} \quad \to t=0.3,\ \frac{-3}{14}$$

$S_1=1 \quad S_2=1 \quad 1+1=2$

$$\to\left(\frac{1}{x}-\frac{1}{x-1}\right)^2+2\left(\frac{1}{x^2-x}\right)-\frac{140}{9}=0 \to \left(\frac{x-1-x}{x^2-x}+\frac{14}{3}\right)\left(\frac{-1}{x^2-x}-\frac{10}{3}\right)=0$$

$$\to\left(\frac{-3+14x^2-14x}{3x^2-3x}\right)\left(\frac{-3-10x^2+10x}{3x^2-3x}\right) \to 14x^2-14x-3=0 \quad \Delta>0 \quad S=\frac{14}{14}=1$$

$$-10x^2+10x-3 \quad \Delta<0$$

1.5

$$\sqrt{x+\sqrt{\underbrace{-x^3+4x^2+25x-100}_{(4-x)(x-5)(x+5)}}}+\sqrt{x^2+\sqrt{\underbrace{-x^2+6x-8}_{-(x-2)(x-4)}}}=x+2$$

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

	2		4	
$-$		$+$		$-$

2

جواب $\overset{8}{4}$

7

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

$$\begin{cases} x>1 \to 2x+1=\frac{-x+17}{3} \to 6x+3=-x+17 & \boxed{x=2} \\ -2<x<1 \to -x+17=9 \to x=8 \\ x<-2 \to -2x-1=\frac{-x+17}{3} \to -6x-3=-x+17 & \boxed{x=-4} \end{cases}$$

1.5

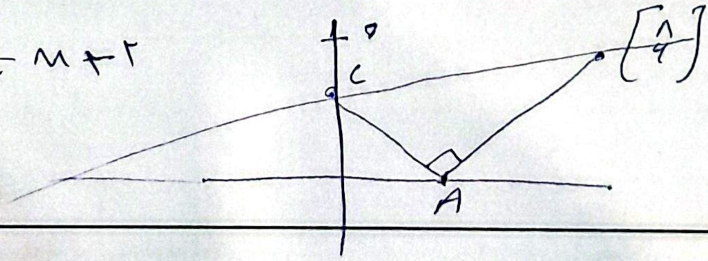
8

$$y=|x+2|+|x-1| \quad \begin{cases} x=2 \to y=\cancel{7}\ 5 \\ x=-4 \to y=7 \end{cases} \to \cancel{\sqrt{(2+4)^2}}=6-AB$$

$2\sqrt{10}$

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

$$y=\frac{1}{2}x+2$$



$AB=\sqrt{8^2+6^2}=10$

$AC=\sqrt{2^2}=2$

$10+2=12$

2

9

$$\frac{1}{x}+\frac{1}{x+1}=\frac{1}{20} \longrightarrow \frac{20x+180+20x-x^2-9x}{20(x^2+9x)}=0$$

2

10

$$\to x^2-31x-180=0 \quad (x-36)(x+5)=0$$

$$x=36$$