نام و نام خانوادگی ...شهرزاد کریمی... پاسخنامه تشریحی تکلیف شماره .... کلاس ....

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$\frac{L}{W}=\frac{5}{2} \Rightarrow L=\frac{5W}{2} \quad L\times W=\frac{5W^2}{2}=S$

$\frac{L'}{W}=\frac{1+\sqrt{5}}{2} \Rightarrow L'=\frac{(1+\sqrt{5})(W)}{2} \quad L'\times W=\frac{(1+\sqrt{5})(W^2)}{2}=S'$

$\frac{S'}{S}=\frac{\frac{(1+\sqrt{5})(W^2)}{2}}{\frac{5W^2}{2}}=1+\sqrt{5}\times\frac{2}{5}=\frac{2(1+\sqrt{5})}{5}$

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$L^2+W^2=D^2 \quad \frac{D}{L}=\frac{1+\sqrt{5}}{2} \quad \frac{W^2}{L^2}=\frac{1+\sqrt{5}}{2} \Rightarrow \frac{L^2}{W^2}=\frac{2}{1+\sqrt{5}}$

$\frac{D^2}{L^2}=\left(\frac{1+\sqrt{5}}{2}\right)^2 \Rightarrow \frac{1+5+2\sqrt{5}}{4}=\frac{6+2\sqrt{5}}{4} \Rightarrow \frac{3+\sqrt{5}}{2}$

$\frac{L^2+W^2}{L^2}=\frac{3+\sqrt{5}}{2} \Rightarrow \frac{L^2}{L^2}+\frac{W^2}{L^2}=1+\frac{W^2}{L^2}=\frac{3+\sqrt{5}}{2} \Rightarrow \frac{W^2}{L^2}=\frac{1+\sqrt{5}}{2}$

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$\sqrt{2x^2+4x}=2-3x \Rightarrow 2x^2+4x=4+9x^2-12x \quad \frac{16\pm\sqrt{144}}{14} \Rightarrow \frac{16\pm 12}{14} \begin{cases} 2 \\ \frac{2}{7} \end{cases}$

$7x^2-16x+4=0 \quad (-16)^2-4(7)(4)=144$

$2 \Rightarrow 3(2)+\sqrt{2(2)^2+4(2)}=6+4=2$ ✗ $\quad \frac{x+1}{x} \Rightarrow \frac{\frac{2}{7}+1}{\frac{2}{7}}=\frac{\frac{9}{7}}{\frac{2}{7}}=\frac{9}{2}$

$\frac{2}{7} \Rightarrow 3\left(\frac{2}{7}\right)+\sqrt{2\left(\frac{4}{49}\right)+4\left(\frac{2}{7}\right)} \Rightarrow \frac{6}{7}+\frac{8}{7}=\frac{14}{7}=2$ ✓

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۲ ریشه مثبت دارد

$\frac{\sqrt{x+1}}{\sqrt{x-1}+3}-\frac{\sqrt{x+1}}{3-\sqrt{x-1}}=\frac{x-1}{\sqrt{x-1}} \quad \frac{+3\sqrt{x+1}-\sqrt{x^2-1}-\sqrt{x^2-1}-3\sqrt{x+1}}{9-x-1}=\frac{x-1}{\sqrt{x-1}}$

$\frac{-2\sqrt{x^2-1}}{8-x}=\frac{x-1}{\sqrt{x-1}} \Rightarrow \frac{-2\sqrt{x+1}}{8-x}=\frac{\sqrt{x-1}}{\sqrt{x-1}} \Rightarrow \frac{-2\sqrt{x+1}}{8-x}=1 \Rightarrow -2\sqrt{x+1}=8-x$

$4x+4=64+x^2-16x \Rightarrow x^2-20x+60=0 \quad \Delta=160 \quad \frac{20\pm\sqrt{160}}{2}$ دو جواب $\sqrt{160}<\sqrt{400}$

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

$\Rightarrow x>0 \Rightarrow -20+10x=4-x^2 \Rightarrow x^2+10x-24=0 \quad \Delta=b^2-4ac \Rightarrow 100-4(1)(-24)=196$

$\frac{-10\pm\sqrt{196}}{2} \begin{cases} 2 \\ -6 \end{cases}$ ریشه مثبت نداره

$x<0 \Rightarrow 20-10x=4-x^2 \Rightarrow x^2-10x+16=0$

$\Delta=b^2-4ac \Rightarrow (-10)^2-4(1)(16)=100-64=36$

$\frac{10\pm\sqrt{36}}{2} \begin{cases} 8 \Rightarrow \frac{1}{\sqrt{2-8}+2}-\frac{1}{2-\sqrt{2-8}}=\frac{2-8}{5\sqrt{2-8}} \Rightarrow \text{غ} \\ 2 \Rightarrow \frac{1}{\sqrt{2-2}+2}-\frac{1}{2-\sqrt{2-2}}=\frac{2-x}{5\sqrt{2-2}} \Rightarrow \frac{2-x}{0} \Rightarrow \text{غ} \end{cases}$

$$\frac{(1-x)^2+x^2}{x^2(1-x)^2}=\frac{160}{9} \qquad 1-2x+2x^2=\frac{160}{9}x^2(1-2x+x^2) \Rightarrow \cancel{9-18x+18x^2}$$

$$9-18x+18x^2=160x^2-320x^3+160x^4 \to 160x^4-320x^3+142x^2+18x-9=0$$ ۶

$$S=-\frac{b}{a}=\ \qquad S=-\frac{-320}{160}=2$$

$$a=160 \qquad b=-320$$

$$-x^2+6x-8\geq 0 \to x^2-6x+8\leq 0 \qquad (x-2)(x-4)\leq 0 \Rightarrow x\in[2,4]$$

$$-x^3+4x^2+25x-100 \begin{cases} x=2 \to -8+16+50-100=-42 \\ x=3 \to -27+36+75-100=-16 \end{cases}$$ ۱ جواب دارد ۷

$$x=4 \to -64+64+100-100=0 \qquad x\in[4,5] \qquad [4,5]\cap[2,4]=\{4\}$$

$$x=5 \Rightarrow -125+100+125-100=0$$

$$4 \to \sqrt{4+\sqrt{-64+64+100-100}}+\sqrt{16+\sqrt{-16+24-8}}=4+2 \quad \sqrt{4}+\sqrt{16}=6 \to 2+4=6 \ ✓$$

$$|x+2|+|x-1| \begin{cases} x+2+x-1=2x+1 & x\geq 1 \\ x+2-x+1=3 & 1>x>-2 \\ -x-2-x+1=-2x-1 & x\leq -2 \end{cases}$$

$$-\frac{1}{3}x+\frac{17}{3}=-2x-1 \qquad \frac{5}{3}x=-\frac{20}{3}\to 5x=-20 \ ✓ \quad x\leq -2$$

$$-2x-1\to -2(-4)-1=7 \qquad B\,\big|\,{}^{-4}_{\ 7}$$ ۸

$$3y=-x+17\to y=-\frac{1}{3}x+\frac{17}{3} \to \frac{7}{3}x=\frac{14}{3}\to x=2 \xrightarrow{2x+1} 2(2)+1=5 \qquad A\,\big|\,{}^{2}_{5}$$

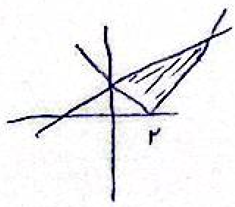
$$-\frac{1}{3}x+\frac{17}{3}=3\to -x+17=9\to -x=-8\to x=8 \ ✗ \ 1>x>-2 \qquad \sqrt{\Delta x^2+\Delta y^2}\to\sqrt{6^2+(2)^2}\to\sqrt{40}$$

$$\sqrt{x^2-4x+4}=|x-2| \qquad x-2=\frac{1}{2}x+2\to\frac{1}{2}x=4\to x=8 \qquad (8)-2=6 \quad y=6$$

$$A\,\big|\,{}^{8}_{6}$$

$$\frac{1}{2}x+2=y \xrightarrow{x=0} \frac{1}{2}(0)+2=y\to y=2 \qquad B\,\big|\,{}^{0}_{2}$$

$$|x-2|=0\to x-2=0\to x=2 \qquad C\,\big|\,{}^{2}_{0}$$ ۹



$$\frac{1}{2}\left|\begin{vmatrix} 8 & 6 & 1 \\ 0 & 2 & 1 \\ 2 & 0 & 1 \end{vmatrix}\right| = \frac{1}{2}(16+12+0-4-0-0)=12$$

$$\frac{1}{x}+\frac{1}{x+9}=\frac{1}{20} \xrightarrow{20x(x+9)} 20(x+9)+20x=x(x+9)$$

$$20x+180+20x=x^2+9x \Rightarrow x^2-31x-180$$ ۱۰

$$(x+5)(x-36)=0 \xrightarrow{x>0} x=36$$