

نام و نام خانوادگی: ریاضا التمانیان پاسخنامه تشریحی تکلیف شماره ۱۱! کلاس: از هم بیرون B.....	درست‌ترین طول نسبت طول به عرض $\frac{1+\sqrt{5}}{2}$ طول n ? $\frac{n}{y} = \frac{5}{6} \Rightarrow y = \frac{6}{5}n$ عرض y $\Rightarrow n' = \frac{6}{5}n \times \frac{1+\sqrt{5}}{2} = \frac{3+3\sqrt{5}}{5}n$ $\frac{n' \times \frac{6}{5}n}{n \times \frac{6}{5}n} = \frac{3+3\sqrt{5}}{5}$ ✓	تقلیر $C = \sqrt{a^2 + b^2}$ $\frac{1+\sqrt{5}}{2} = \frac{C}{a} \Rightarrow \frac{1+\sqrt{5}}{2} = \frac{\sqrt{a^2 + b^2}}{a} \Rightarrow C + a\sqrt{5} = 2\sqrt{a^2 + b^2}$ عرض b $\Rightarrow ((1+\sqrt{5})a)^2 = (2\sqrt{a^2 + b^2})^2 \Rightarrow 6 + 4\sqrt{5}a^2 = 4a^2 + 4b^2$ طول a $\Rightarrow \frac{a^2}{b^2} = \frac{4}{2+2\sqrt{5}} = \frac{\sqrt{5}-1}{2} = \frac{2}{1+\sqrt{5}}$ ✓	$2-3a = \sqrt{4a^2 + 9b^2} \Rightarrow 4 + 9a^2 - 12a = 4a^2 + 9b^2 \Rightarrow 5a^2 - 12a + 4 = 0$ $5a^2 - 12a + 4 = 0$ $a < 0 \Rightarrow 5a^2 - 12a + 4 = 0$ $a = 1, 4/5$ $\frac{2}{\sqrt{5}} + \frac{1}{\sqrt{5}} = \frac{3}{\sqrt{5}} = \frac{9}{5}$ ✓	در عبارت $\frac{\sqrt{n+1}(2-\sqrt{n+1}) - (\sqrt{n+1}(\sqrt{n-1}+2))}{n^2 - (\sqrt{n-1})^2}$ $\frac{n-1}{\sqrt{n-1}} = \frac{2-\sqrt{n+1}}{10-n} = \frac{n-1}{\sqrt{n-1}}$ $\Rightarrow -2\sqrt{n-1} \times \sqrt{n+1} \times \sqrt{n-1} = (10-n)(\sqrt{n-1}) \Rightarrow +2\sqrt{n+1} = n-10$ $\Rightarrow 4n+4 = n^2-20n+100 \Rightarrow n^2-24n+96=0 \Rightarrow n=12 \pm 4\sqrt{3} \Rightarrow 12+4\sqrt{3}=n$	$\sqrt{2-n} = z \Rightarrow \frac{1}{z+2} - \frac{1}{2z} = \frac{z^2}{5z} \Rightarrow \frac{2-z-z-2}{(z+2)(2z)} = \frac{z}{5}$ $\Rightarrow \frac{-2z}{(z+2)(2z)} = \frac{z}{5} \Rightarrow -10z - z^2 + 4 = 0 \Rightarrow z^2 + 10z - 4 = 0 \Rightarrow z = \frac{-10 \pm \sqrt{100+16}}{2} = \frac{-10 \pm \sqrt{116}}{2}$ حاصل $\Rightarrow n = -12$
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$$\frac{(1-n)^2 + n^2}{n^2(1-n)^2} \Rightarrow \frac{2n^2 - 2n + 1}{(n(1-n))^2} \Rightarrow \frac{2n(n-1) + 1}{(n(1-n))^2} = \frac{1}{9} \Rightarrow \frac{n(n-1)}{1-n} = \frac{1}{9}$$

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$$\Rightarrow \frac{-2z+1}{9} = \frac{1}{9} \Rightarrow 1 \leq z^2 + 11z - 9 = 0 \Rightarrow z = \frac{3}{15}, -\frac{12}{15}$$

$$n^2 - n + \frac{5}{15} = 0 \Rightarrow 5 = \frac{5(1)}{1} = 1 \quad \left. \begin{array}{l} \\ \end{array} \right\} \Rightarrow 1+1=2 \quad \checkmark$$

$$n^2 - n - \frac{12}{15} = 0 \Rightarrow 5 = \frac{5(1)}{1} = 1 \quad \left. \begin{array}{l} \\ \end{array} \right\} \Rightarrow 1+1=2 \quad \checkmark$$

$$-n^2 + 5n - 1 \geq 0 \Rightarrow n^2 - 5n + 1 \leq 0$$

$$\begin{array}{cc} 2 & 4 \\ + & - & + \end{array}$$

ابتداءً در این حالت، اعدادی که

$$2 \leq n \leq 5$$

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$$-n^2 + 5n^2 + 25n - 100 \geq 0 \Rightarrow (n-4)(25-n^2) \geq 0$$

$$\begin{array}{ccc} - & + & - \\ + & - & + & - \end{array}$$

$$n \leq -5$$

$$5 \leq n \leq 10$$

پس در این نقطه 5 قبل است $\Rightarrow$ $5 \leq n \leq 10$ و 5 بعد از 5 است $\Rightarrow$ $n=5$ (جواب)

$$|n+2| + |n-1| = -\frac{n+1}{3} \Rightarrow 3|n+2| + 3|n-1| = -n+1$$

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$$3n+6+3n-3 = -n+1 \Rightarrow 6n+3 = -n+1 \Rightarrow 7n = -2 \Rightarrow n = -\frac{2}{7} \Rightarrow y = 5$$

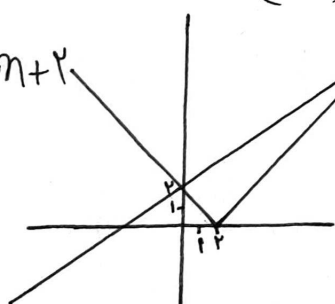
$$-3n-5-3n+3 = -n+1 \Rightarrow -6n-2 = -n+1 \Rightarrow -5n = 3 \Rightarrow n = -\frac{3}{5} \Rightarrow y = 7$$

$$mab = \sqrt{(1-(-\frac{3}{5}))^2 + (5-7)^2} = \sqrt{9} = 3 \Rightarrow 3\sqrt{10} \quad \checkmark$$

$$y = \sqrt{n^2 - 5n + 6} = \sqrt{(n-2)^2} = |n-2| \Rightarrow |n-2| = \frac{1}{5}n+2$$

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$$y = \frac{1}{5}n+2 \quad (1,5) \Rightarrow n-2 = \frac{1}{5}n+2 \Rightarrow \frac{1}{5}n = 4 \Rightarrow n=20 \Rightarrow y=5$$



$$n-2 = -2 - \frac{1}{5}n \Rightarrow \frac{6}{5}n = 0 \Rightarrow n=0 \Rightarrow y=2$$

$$ost = \sqrt{(2-0)^2 + (0-2)^2} = 2\sqrt{2}$$

$$\frac{1}{5}Ah \Rightarrow \frac{1}{5} \times 2 \times \frac{1}{\sqrt{2}} = \frac{2}{5\sqrt{2}} \quad \checkmark$$

$$ارتفاع = \frac{|1+5-2|}{\sqrt{1+1/25}} = \frac{4}{\sqrt{1.2}} \Rightarrow$$

$$z = \text{کاربرد} \Rightarrow \frac{1}{z} + \frac{1}{z-9} = \frac{1}{2} \Rightarrow z + z-9 = \frac{z^2-9z}{2}$$

$$z-9 = \text{کاربرد} \Rightarrow 5z-18 = z^2-9z \Rightarrow z^2-14z+18=0 \Rightarrow z=9, 2$$

$$\Rightarrow z^2-14z+18=0 \Rightarrow z=9, 2 \quad \checkmark$$

$$z-9 = \frac{1}{5} \quad \checkmark$$

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