

پارامتر B

۱۹، ۲۵

تکلیف ۱۸

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$$\frac{n}{y} = \frac{1}{r} \Rightarrow r n = y \Rightarrow y = \frac{1}{r} n \Rightarrow n' = \frac{\sqrt{5}+1}{2} y \Rightarrow n' = \frac{\sqrt{5}+1}{2} \times \frac{1}{r} n = \frac{2\sqrt{5}+2}{5} n$$

$$\Rightarrow \frac{1}{5} = \frac{n' y}{n y} = \frac{n'}{n} = \frac{2+2\sqrt{5}}{5} n = \frac{2+2\sqrt{5}}{5} \checkmark$$

(۲)

$$\frac{\sqrt{n^2+y^2}}{n} = \frac{1+\sqrt{5}}{2} \Rightarrow \frac{n^2+y^2}{n^2} = \frac{1+\sqrt{5}+2\sqrt{5}}{4} = \frac{3+\sqrt{5}}{2} \Rightarrow 1 + \frac{y^2}{n^2} = \frac{3+\sqrt{5}}{2} \Rightarrow \frac{y^2}{n^2} = \frac{1+\sqrt{5}}{2}$$

$$\Rightarrow \left(\frac{n}{y}\right)^2 = \frac{n^2}{y^2} = \frac{2}{1+\sqrt{5}} \times \frac{\sqrt{5}-1}{\sqrt{5}-1} = \frac{2(\sqrt{5}-1)}{4} = \frac{\sqrt{5}-1}{2} \checkmark$$

(۳)

$$\sqrt{2a^2+5a} = 2-2a \Rightarrow 2a^2+5a = 4a^2-12a+4 \Rightarrow 2a^2-17a+4=0 \Rightarrow a = \frac{17 \pm \sqrt{(17)^2-4(2)(4)}}{4}$$

$$\Rightarrow a = \frac{17 \pm \sqrt{289-32}}{4} = \frac{17 \pm 15}{4} = \frac{1 \pm 4}{4} = \frac{1}{4} < \frac{2}{4} \xrightarrow{2-4a} 2-4\left(\frac{1}{4}\right) = 2-1 = 1 > 0 \Rightarrow \text{مقبول}$$

$$\Rightarrow \frac{a+1}{a} = 1 + \frac{1}{a} = 1 + \frac{1}{\frac{1}{4}} = 1+4 = 5 \neq \frac{9}{4}$$

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$$\frac{2\sqrt{n+1} - \sqrt{n^2-1} - \sqrt{n^2-1} - 2\sqrt{n^2-1}}{9-(n-1)} = \sqrt{n+1} \Rightarrow \frac{-2\sqrt{n^2-1}}{10-n} = \sqrt{n+1} \Rightarrow \frac{-2\sqrt{n+1}}{10-n} = 1$$

$$\Rightarrow -2\sqrt{n+1} = 10-n \Rightarrow 2\sqrt{n+1} = n-10 \Rightarrow 4(n+1) = n^2-20n+100 \Rightarrow n^2-24n+96=0$$

$$n = \frac{24 \pm \sqrt{24^2-4(1)(96)}}{2} = \frac{24 \pm \sqrt{576-384}}{2} = \frac{24 \pm \sqrt{192}}{2} = \frac{24 \pm 8\sqrt{3}}{2} = 12 \pm 4\sqrt{3}$$

$$12+4\sqrt{3} > 10 \Rightarrow \text{مقبول}$$

(۲)

(۲) $n=2$ ریشه مجربه

مقبول نیست!

$$\frac{2-\sqrt{2-n} - 2-\sqrt{2-n}}{2-(2-n)} = \frac{-2\sqrt{2-n}}{n} = \frac{\sqrt{2-n}}{n} \Rightarrow \frac{2}{n+2} = \frac{1}{n} \Rightarrow n+2=1 \Rightarrow n=-1$$

ریشه مثبت دارد ندارد!

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$$\Rightarrow 9(1-x)^r + 9x^r = 14 \cdot x^r (1-x)^r \Rightarrow 9x^r - 18x + 9 + 9x^r = 18x^r - 18x + 9 = 14x^r(1-x)^r$$

$$18x^r - 18x + 9 = 14x^r - 18x^r + 14x^r \Rightarrow 14x^r - 18x^r + 18x - 9 = 0$$

$$\frac{1 - 18x + x^r + x^r}{(x(1-x))^r} = \frac{r(x^r - x) + 1}{(x - x^r)^r} = \frac{14}{9} \xrightarrow{x=x=t} \frac{r t + 1}{t^r} = \frac{14}{9}$$

$$14 \cdot t^r - 18t - 9 = 0 \xrightarrow{\text{نموذج}} \begin{cases} t = 0,3 \rightarrow x^r - x - 0,3 = 0 \xrightarrow{\Delta} S = 1 \\ t = -\frac{r}{14} \rightarrow x^r - x + \frac{r}{14} = 0 \xrightarrow{\Delta} S = 1 \end{cases} \rightarrow S = 2$$

$$J_1 \cup J_2 \cup J_3 \rightarrow x^r + 6x^r + 5x - 1 \dots$$

$$y + n = 14 \Rightarrow y = -n + 14 \Rightarrow y = -\frac{1}{2}x + \frac{14}{2}$$

$$y = |x+2| + |n-1|$$

$$\begin{array}{c|c|c} -r & r & r+1 \\ \hline -r-1 & r & r+1 \end{array}$$

$$\begin{cases} -r-1 = -\frac{1}{2}x + \frac{14}{2} \Rightarrow -4n - (5-n+14) = -2n+7 \Rightarrow n = -1 \Rightarrow y = 14 \\ r = -\frac{1}{2}x + \frac{14}{2} \Rightarrow 9 = -n + 14 \Rightarrow n = 5 \xrightarrow{n \in [1,5]} \text{مطلوب} \\ r+1 = -\frac{1}{2}x + \frac{14}{2} \Rightarrow 4n + 5 - n + 14 = 3n+19 \Rightarrow 3n = -1 \Rightarrow n = -\frac{1}{3} \Rightarrow y = 14 \end{cases}$$

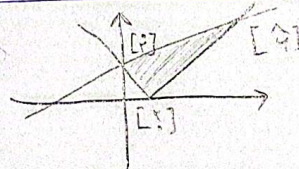
$$\Rightarrow AB = \sqrt{(r-(-1))^2 + (4-5)^2} = \sqrt{4+1} = \sqrt{5} \checkmark$$

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

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

$$\Rightarrow |x-2| = \frac{1}{r}x + r \Rightarrow \begin{cases} x-2 = \frac{1}{r}x + r \Rightarrow \frac{x}{r} = 2+r \Rightarrow x = 2r+2 \Rightarrow y = 4 \\ x-2 = -\frac{1}{r}x - r \Rightarrow \frac{x}{r} = 2-r \Rightarrow x = 2-2r \Rightarrow y = 2 \end{cases} \quad |x-2| = 0 \Rightarrow x = 2$$

$$\begin{vmatrix} 0 & 2 & 1 \\ 2 & 0 & 4 \\ 1 & 1 & 1 \end{vmatrix} \Rightarrow S = \frac{1}{r} |0 + 12 + 12 - (0 + 0 + 4)| = \frac{1}{r} \times 18 = 18 \checkmark$$



$$\frac{1}{n} + \frac{1}{n+9} = \frac{1}{r} \Rightarrow r \cdot n + 18 + r \cdot n = n^2 + 9n \Rightarrow n^2 - 2r \cdot n - 18 = 0$$

$$(n-2r)(n+9) = 0 \Rightarrow n = \begin{cases} 2r \\ -9 \end{cases} \checkmark \Rightarrow \text{مطلوب}$$

✓ بررسی دایره ها :

$$1) -x^3 + 4x^2 + 25x - 100 \geq 0 \rightarrow -(x-4)(x-5)(x+5) \geq 0$$

$$\frac{-5 \quad 4 \quad 5}{+ \quad | - | + \quad | -}$$

$$x \in (-\infty, 5] \cup [4, 5]$$

$$2) -x^2 + 4x - 8 \geq 0 \rightarrow x \in [2, 4]$$

$$3) \text{ زیر رادیکال اول } \geq 0 \rightarrow x \geq 0$$

$$4) \text{ زیر رادیکال دوم معکوسه مثبت } 4$$

$$5) \underbrace{x+2}_{\text{جواب رادیکال}} \geq 0 \rightarrow x \geq -2$$

جواب رادیکال

$\rightarrow x = 4$
در معادله صدق میکنه
و مقدارش 4 است ✓