

نام و نام خانوادگی: ... اسیر محمد مجتبی ... پاسخنامه تشریحی تکلیف شماره ۱۸ ... کلاس: ... از دهم سپهر ۳

افزایش طول
نسبت

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

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$$\frac{\delta_{\text{طول}}}{\delta_{\text{نسبت}}} = \frac{\frac{n'}{y} - 4}{\frac{n'}{y} - 4} = \frac{n'}{n} = \frac{1+\sqrt{5}}{2} = \frac{1+\sqrt{5}}{2} = \frac{2+2\sqrt{5}}{2} = 1+\sqrt{5} = 1+2.236 = 3.236$$

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$$\frac{\sqrt{a^2 - y^2}}{n} = \frac{1+\sqrt{5}}{2}$$

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

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

مقدار

$$3a + \sqrt{4a^2 + 4a} = 2 \Rightarrow \sqrt{4a^2 + 4a} = 2 - 3a$$

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رشته ای

$$4a^2 + 4a = 9a^2 - (4a + 4) \Rightarrow \sqrt{4a^2 - 4a + 4} = 0$$

طرف دیگر از منی که در ابراهام
بی رانده منی با نیت

$$4a^2 - 4a + 4 = 0 \Rightarrow (a - 1)(a - 1) = 0 \Rightarrow a = \frac{1 \pm \sqrt{1-4}}{2} = 1$$

$$a = \frac{2}{\sqrt{5}} \checkmark \Rightarrow \frac{a+1}{a} = \frac{\frac{2}{\sqrt{5}} + 1}{\frac{2}{\sqrt{5}}} = \frac{2 + \sqrt{5}}{2} = 1.5 + \frac{\sqrt{5}}{2} = 1.5 + 1.118 = 2.618$$

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مخرج
مخرج

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

مقدار ۲

$$\frac{-2\sqrt{n^2-1}}{1-n} = \frac{\sqrt{n-1}\sqrt{n+1}}{\sqrt{n-1}} = \sqrt{n+1} = 1 - 2\sqrt{n+1} = 1 - 2\sqrt{n+1}$$

$$1 - 2\sqrt{n+1} = 1 - 2\sqrt{n+1} \Rightarrow 2\sqrt{n+1} = 0 \Rightarrow \sqrt{n+1} = 0 \Rightarrow n+1 = 0 \Rightarrow n = -1$$

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پس فقط یک جواب مثبت دارد

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

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

پس جواب مثبت ندارد

$$\frac{1}{m^2} + \frac{1}{(1-m)^2} = \frac{14}{9} \Rightarrow \frac{m^2 - 2m + 1 + m^2}{(m^2 - m)^2} = \frac{14}{9} \Rightarrow \frac{2m^2 - 2m + 1}{(m^2 - m)^2} = \frac{14}{9}$$

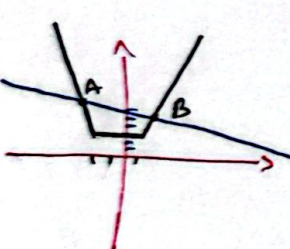
$$\frac{2m^2 - 2m + 1}{(m^2 - m)^2} = \frac{14}{9} \Rightarrow \frac{2(m^2 - m) + 1}{(m^2 - m)^2} = \frac{14}{9} \Rightarrow \frac{2(m^2 - m) + 1}{(m^2 - m)^2} = \frac{14}{9}$$

$$t = 1 \pm \frac{\sqrt{(1-m)^2 - 4(14/9)}}{2 \cdot 14/9} = \frac{1 \pm \sqrt{14/9}}{14/9} \Rightarrow t = \frac{9 \pm 3\sqrt{14}}{14} \Rightarrow m^2 - m + \frac{9}{14} = 0 \Rightarrow m = \frac{1 \pm \sqrt{1 - 4 \cdot \frac{9}{14}}}{2} = \frac{1 \pm \sqrt{1 - \frac{36}{14}}}{2} = \frac{1 \pm \sqrt{\frac{14 - 36}{14}}}{2} = \frac{1 \pm \sqrt{\frac{-22}{14}}}{2}$$

$$\sqrt{-m^2 + 4m - 1} \geq 0 \Rightarrow \sqrt{-(m^2 - 4m + 1)} \geq 0 \Rightarrow \sqrt{-(m-2)^2 + 3} \geq 0$$

$$\frac{1}{4} + \frac{1}{4} = \frac{1}{2} \Rightarrow \frac{1}{4} \leq m \leq \frac{3}{4} \Rightarrow |m-2| \leq \sqrt{3} \Rightarrow 2 - \sqrt{3} \leq m \leq 2 + \sqrt{3}$$

$$\sqrt{-m^2 + 4m - 1} \geq 0 \Rightarrow -m^2 + 4m - 1 \geq 0 \Rightarrow m^2 - 4m + 1 \leq 0 \Rightarrow (m-2)^2 \leq 3 \Rightarrow 2 - \sqrt{3} \leq m \leq 2 + \sqrt{3}$$

$$y = \frac{1}{2}x + 2 \Rightarrow y = -\frac{1}{2}x + \frac{14}{9} \Rightarrow y = (m^2 - 1) \Rightarrow y = \begin{cases} m^2 - 1 & m > 1 \\ m^2 - 1 & m < -1 \\ -m^2 + 1 & -1 < m < 1 \end{cases}$$


$$-\frac{1}{2}x + \frac{14}{9} = m^2 - 1 \Rightarrow \frac{1}{2}x = \frac{14}{9} - m^2 + 1 \Rightarrow x = \frac{22}{9} - 2m^2$$

$$-\frac{1}{2}x + \frac{14}{9} = -m^2 + 1 \Rightarrow \frac{1}{2}x = \frac{14}{9} - m^2 + 1 \Rightarrow x = \frac{22}{9} - 2m^2$$

$$AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{14} = 2\sqrt{10}$$

$$y = \frac{1}{2}x + 2 \Rightarrow y = m^2 - 1 \Rightarrow y = \sqrt{2x - 4m^2} \Rightarrow \sqrt{2x - 4m^2} = \frac{1}{2}x + 2 \Rightarrow \sqrt{2x - 4m^2} = \frac{1}{2}x + 2$$

$$|m-1| = \frac{1}{2}x + 2 \Rightarrow m-1 = \frac{1}{2}x + 2 \Rightarrow \frac{1}{2}x = m-3 \Rightarrow x = 2m-6 \Rightarrow y = 4 \Rightarrow A(1, 4), C(1, 4)$$

$$|m-1| = \frac{1}{2}x + 2 \Rightarrow m-1 = -\frac{1}{2}x + 2 \Rightarrow \frac{1}{2}x = 3-m \Rightarrow x = 6-2m \Rightarrow y = 2 \Rightarrow B(0, 2)$$

$$AB = \sqrt{(4-0)^2 + (4-2)^2} = \sqrt{20} = 2\sqrt{5}$$

$$CH = \frac{|4y - 2x - 1|}{\sqrt{a^2 + b^2}} = \frac{|16 - 2 - 1|}{\sqrt{16 + 4}} = \frac{13}{\sqrt{20}} = \frac{13\sqrt{5}}{10}$$

$$\frac{1}{t} + \frac{1}{t+9} = \frac{1}{2} \Rightarrow \frac{t+t+9}{t^2+9t} = \frac{1}{2} \Rightarrow \frac{2t+9}{t^2+9t} = \frac{1}{2} \Rightarrow 2(2t+9) = t^2+9t \Rightarrow 4t+18 = t^2+9t \Rightarrow t^2+5t-18 = 0 \Rightarrow (t-3)(t+6) = 0 \Rightarrow t = 3$$

$$t = 3, t = -6 \Rightarrow t = 3$$