

$$\frac{x}{y} = \frac{a}{r} \rightarrow y = \frac{r}{a} x$$

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$$\int \frac{x' y}{x y} = \frac{x'}{x}$$

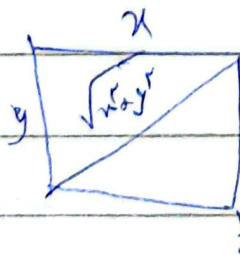
$$\frac{x' + y}{x'} = \frac{x'}{y}$$

$$\frac{x' + \frac{r}{a} x}{x'} = \frac{x'}{\frac{r}{a} x} \rightarrow 1 + \frac{r}{a} \frac{x}{x'} = \frac{\frac{a}{r} x'}{x}$$

$$\rightarrow \frac{x'}{x} = K \rightarrow \frac{aK + r}{aK} = \frac{aK}{r}$$

$$\rightarrow r_0 K + 1 = r_0 K^2 \rightarrow r_0 K^2 - r_0 K - 1 = 0$$

$$K = \frac{r_0 + r_0 \sqrt{a}}{a} \rightarrow \frac{x'}{x} = \frac{r_0 + r_0 \sqrt{a}}{a}$$



$$\frac{\sqrt{x^2 + y^2}}{x} = \frac{1 + \sqrt{a}}{r} \rightarrow \frac{x^2}{y^2} = ?$$

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$$\frac{\sqrt{x^2 + y^2}}{x} = \frac{\sqrt{a+1}}{r} \rightarrow \frac{y^2}{x^2} = \frac{\sqrt{a+1}}{r}$$

$$\rightarrow \frac{x^2}{y^2} = \frac{r}{\sqrt{a+1}} = \frac{\sqrt{a-1}}{r}$$

$$\sqrt{2a^2 + 4a + 4} = 2 - 2a \rightarrow 2a^2 + 4a + 4 = 4a^2 - 12a + 4$$

$$2a^2 - 14a + 4 = 0 \xrightarrow{GG} a^2 - 14a + 2 = 0 \rightarrow (a - 14)(a - 2) = 0$$

$$a \leq \frac{14}{2}, a \leq \frac{2}{2}$$

$$GG \rightarrow \frac{a+1}{a} = 1 + \frac{1}{a} = 1 + \frac{2}{2} = \frac{4}{2}$$

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

$$\frac{2\sqrt{x^2 - 1}}{x-10} = \frac{x-1}{\sqrt{x-1}} = \sqrt{x-1} \rightarrow \frac{2\sqrt{x+1}}{x-10} = 1$$

$$2\sqrt{x+1} = x-10 \xrightarrow{GG} 4x+4 = x^2 - 20x + 100$$

$$\rightarrow x^2 - 24x + 96 = 0$$

$$x = \frac{24 \pm \sqrt{24^2 - 4 \cdot 1 \cdot 96}}{2} = \frac{24 \pm 16}{2} \rightarrow$$

مقدارهای مثبت و منفی

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

$$\rightarrow \frac{x-1 + x+1}{x^2-1} = \frac{x}{1} \rightarrow \frac{2x}{x^2-1} = \frac{x}{1}$$

$$105 \quad x^2-1 \rightarrow x^2=1 \rightarrow x^2-x=1 \rightarrow x=1$$

داده های مسئله

$$\frac{(1-x)^2 + x^2}{x^2(1-x)^2} = \frac{14}{9} \quad -5$$

$$\rightarrow \frac{x^2 - 2x + 1 + x^2}{x^2(x^2 - 2x + 1)} = \frac{14}{9} \rightarrow \frac{2x^2 - 2x + 1}{x^2(x^2 - 2x + 1)} = \frac{14}{9}$$

$$x^2 - 2x + 1$$

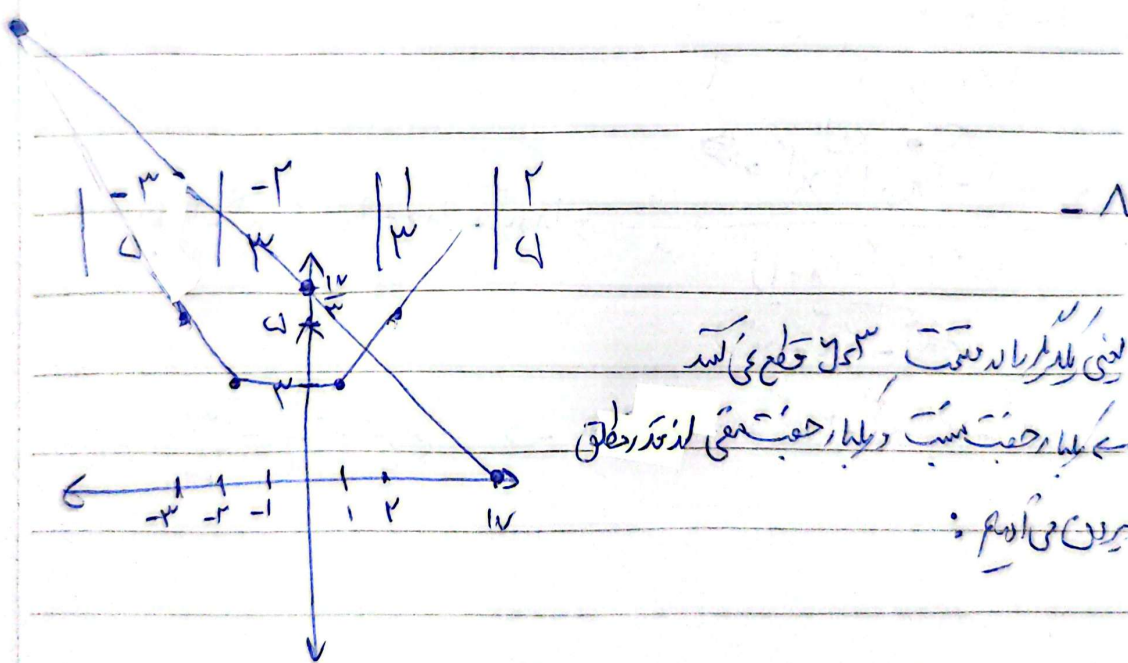
$$14x^2 - 22x^3 - 2x^2 + 14x - 950 \rightarrow \frac{-b}{a} = \frac{22}{14} = 1$$

$$\sqrt{x} + \sqrt{-(x-4)(x+4)(x-4)} + \sqrt{x^2 + \sqrt{-(x-4)(x+4)} - 1}$$

$$\frac{-4 \quad 4 \quad 4}{+ \quad - \quad +} = \{4, -\}$$

در معادله مستوی است

پس معادله جواب صحیح دارد.



یعنی باید در سمت راست و چپ می کشد
که باید جهت مثبت و باید جهت منفی از آن در خط
بیرون می آید :

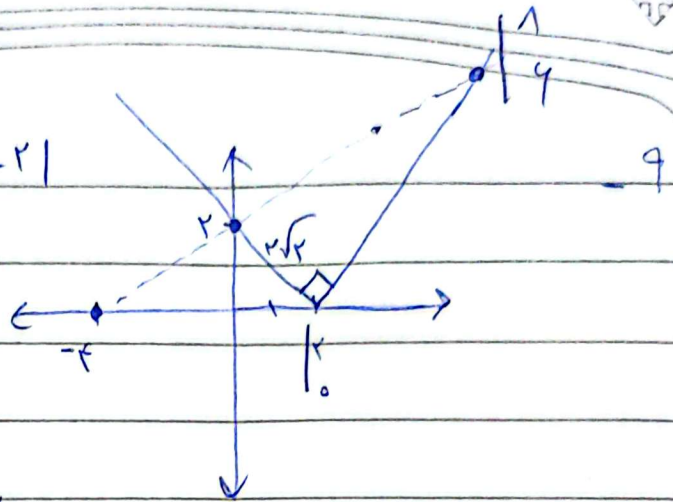
$$-\frac{1}{2}x + \frac{14}{3} = \begin{cases} 2x+1 \\ -2x-1 \end{cases} \xrightarrow{x^3} -x+14 \begin{cases} 4x+3 \textcircled{1} \\ -4x-3 \textcircled{2} \end{cases}$$

$$\textcircled{1} \rightarrow \sqrt{5} \quad \textcircled{2} \rightarrow \sqrt{-5}$$

$$\rightarrow AB = \sqrt{(2-(-2))^2 + (4-1)^2} = 2\sqrt{10}$$



$$y \leq \sqrt{(x-2)^2} \leq |x-2|$$



$$x-2 \leq \frac{1}{2}x+2$$

$$\frac{1}{2}x \leq 4 \Rightarrow x \leq 8 \Rightarrow y \leq 4$$

$$\text{طول لایحه: } \sqrt{(1-2)^2 + (4-2)^2} = 2\sqrt{2} \Rightarrow S \leq \frac{1}{2} \times 2\sqrt{2} \times 2\sqrt{2} = 4$$

$$\text{بروز } b \rightarrow f = b+9 \rightarrow \frac{1}{b+9} + \frac{1}{b} = \frac{1}{20}$$

$$\frac{\frac{20}{b} + \frac{20}{b+9}}{\frac{20}{b} + \frac{20}{b+9}} = \frac{1}{20} \Rightarrow 20 \cdot b + 180 = b^2 + 9b$$

$$\Rightarrow b^2 - 11b - 180 = 0 \Rightarrow (b-14)(b+12) = 0$$

$$\Rightarrow b = 14$$