

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

- ۱

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

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

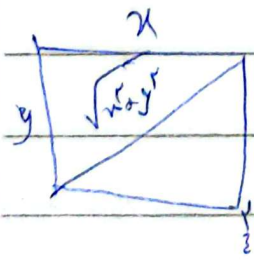
(۲)

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

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

$$\rightarrow K_0 K + 1 = K_0 K \rightarrow K_0 K^2 - K_0 K - 1 = 0$$

$$K = \frac{K_0 + \sqrt{K_0^2 + 4}}{2} \rightarrow \frac{x'}{x} = \frac{K_0 + \sqrt{K_0^2 + 4}}{2} \quad \checkmark$$



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

(۲)

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

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

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

$$\sqrt{a^2 - 14a + 49} = 0 \xrightarrow{(3)} a^2 - 14a + 49 = 0 \rightarrow (a-7)(a-7) = 0$$

$$a = \frac{14}{2}, a = \frac{7}{1}$$

$$\sqrt{GG} \quad \hookrightarrow GG \rightarrow \frac{a+1}{a} = 1 + \frac{1}{a} = 1 + \frac{1}{2} = \frac{3}{2} \quad \checkmark$$

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

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

جواب ادبیات  $\leq 0$

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

$$\rightarrow x^2 - 21x + 99 = 0 \quad \hookrightarrow x > 10$$

$$x = \frac{21 \pm \sqrt{441 - 396}}{2} = \frac{21 \pm 13}{2} \rightarrow$$

صورتی است  
صورتی است

یک از ریشه ها کمتر از 10 است!

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

$$\rightarrow \frac{x-2 + x+2}{x^2-4} = \frac{x}{x^2-4} \rightarrow \frac{x}{x^2-4} \quad (2)$$

$10 \leq x^2-4 \rightarrow x^2 \geq 4 \rightarrow x \geq 2$   ~~$x \leq -2$~~   $\rightarrow x \geq 2$   
 جواب صحیح ندارد ✓

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

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

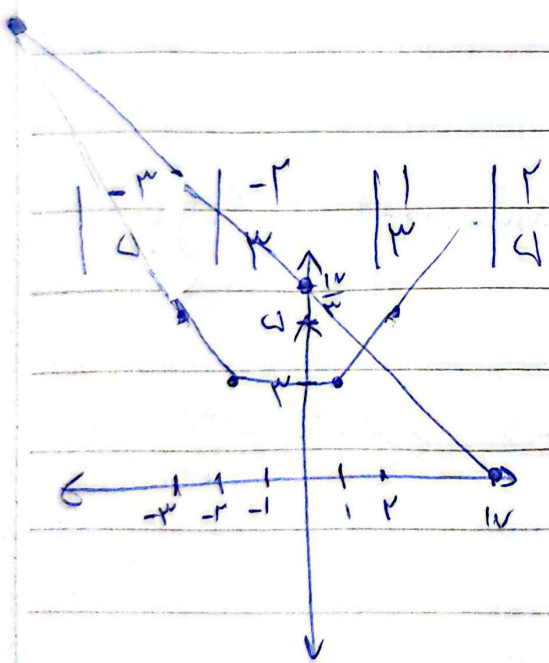
$$\frac{2x^2 - 2x + 1}{x^2 - 2x + 1} = \frac{14}{9}$$

$$14x^2 - 22x^2 - 2x^2 + 14x - 9 = 0 \rightarrow \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{22 \pm \sqrt{484 - 4(14)(-9)}}{2(14)} = \frac{22 \pm \sqrt{484 + 504}}{28} = \frac{22 \pm \sqrt{988}}{28}$$

$$\sqrt{x} + \sqrt{-(x-4)(x+4)(x-4)} + \sqrt{x^2 + \sqrt{-(x-4)(x+4)(x-4)}} - \sqrt{2x+3}$$

$$\frac{-4 \quad 4 \quad 4}{+ \quad - \quad +} - \left\{ \begin{matrix} 4 \\ -3 \end{matrix} \right\} \rightarrow \text{در معادله صدق کند}$$

(۲) پس معادله کثرت جواب حقیقی دارد.



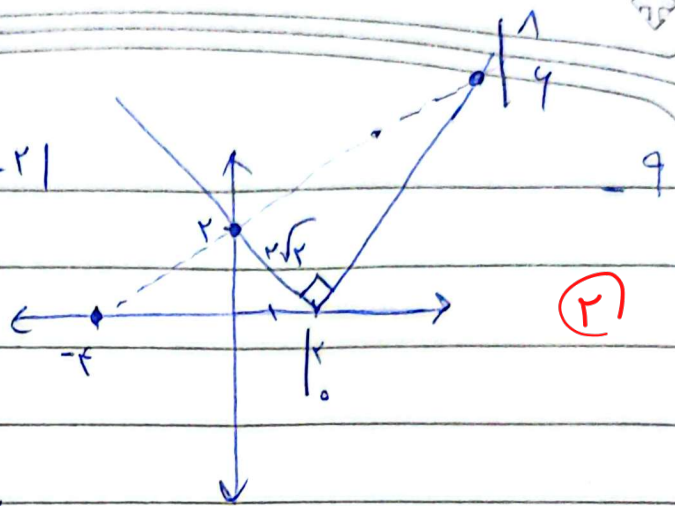
(۲) یعنی باید براد سمت سمتی و قطع می کند  
 به بالا جهت مثبت و به پایین جهت منفی لذت در حلقه  
 بیرون می آید :

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

(1)  $\rightarrow |5$  (2)  $\rightarrow |5$

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

$$y \leq \sqrt{(x-1)^2} \leq |x-1|$$



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

$$\frac{1}{2}x \leq 3 \Rightarrow x \leq 6 \Rightarrow y \leq 4$$

طولها:  $\sqrt{(1-(-f))^2 + (4-0)^2} = 4\sqrt{2} \Rightarrow S = \frac{1}{2} \times 4\sqrt{2} \times 4\sqrt{2} = 16$  ✓

بزرگ  $b \rightarrow f = b+9$   $\rightarrow \frac{1}{b+9} + \frac{1}{b} = \frac{1}{10}$  (2)

$$\frac{10b}{b^2+9b} = \frac{1}{10} \Rightarrow 10 \cdot b + 10 \cdot 9 = b^2 + 9b$$

$$\Rightarrow b^2 - 10b - 90 = 0 \Rightarrow (b-14)(b+6) = 0$$

$$\Rightarrow b = 14 \text{ h}$$
 ✓