

$$\frac{\text{طول}}{\text{عرض}} = \frac{5}{4}$$

$$\frac{\text{طول} + 5}{\text{عرض}} = \frac{1+\sqrt{5}}{2} \Rightarrow \frac{\text{طول}}{\text{عرض}} + \frac{5}{\text{عرض}} = \frac{1+\sqrt{5}}{2}$$

$$\frac{\text{طول}}{\text{عرض}} + \frac{5}{\text{عرض}} = \frac{1+\sqrt{5}}{2} \Rightarrow \frac{\text{طول}}{\text{عرض}} = \frac{1+\sqrt{5}}{2} - \frac{5}{\text{عرض}}$$

$$\frac{S}{S} = \frac{\text{طول} \times \text{عرض}}{\text{طول} \times \text{عرض}} = \frac{\frac{\text{طول}}{\text{عرض}}}{\frac{\text{طول}}{\text{عرض}}} = \frac{1+\sqrt{5}}{2}$$

$$\Rightarrow \frac{\text{طول}}{\text{عرض}} = \frac{5}{2+\sqrt{5}}$$

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$$2a + \sqrt{4a^2 + 4a} = 2$$

$$\Rightarrow \sqrt{4a^2 + 4a} = 2 - 2a \Rightarrow 4a^2 + 4a = 4 - 8a + 4a^2 \Rightarrow 12a = 4 \Rightarrow a = \frac{1}{3}$$

$$a^2 - 14a + 21 = 0 \Rightarrow (a-1)(a-21) = 0 \Rightarrow a = 1 \text{ or } a = 21$$

$$\frac{1}{3} = 2, \frac{2}{3}$$

$$\frac{4}{3} + \frac{1}{3} = \frac{5}{3} = 2 \checkmark \quad \frac{a+1}{a} = \frac{\frac{1}{3}+1}{\frac{1}{3}} = \frac{\frac{4}{3}}{\frac{1}{3}} = 4$$

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

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

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

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

$$1-x = -2\sqrt{x+1}$$

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

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

$$\rightarrow \frac{x^2}{4} - 4x + 2 = 0 \Rightarrow x^2 - 16x + 8 = 0$$

دلتا

$$\Delta = b^2 - 4ac = 16^2 - 4 \times 1 \times 8 = 144 \Rightarrow \sqrt{\Delta} = \sqrt{144} = 12$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{16 \pm 12}{2} = 14 \pm 2$$

$$\sqrt{x-1} \Rightarrow x > 1 \quad \sqrt{x+1} \Rightarrow x > -1 \quad \cap \Rightarrow x > 1$$

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

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

$$\rightarrow \frac{(x-1)(x+1)}{x^2-1} = \frac{-1 \cdot (x-1)}{-x+1} \Rightarrow x^2+1-x-1=0 \Rightarrow (x+1)(x-2)=0$$

$$x = -1, -2$$

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

$$\frac{1}{\sqrt{12}+2} - \frac{1}{2-\sqrt{12}} = \frac{12}{2\sqrt{12}} \rightarrow \frac{2-\sqrt{12}-(2+\sqrt{12})}{(2-\sqrt{12})(2+\sqrt{12})} = \frac{12}{2\sqrt{12}}$$

$$2-12 = -10$$

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

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

$$\left(\frac{1}{x} + \frac{1}{1-x}\right)^r - r\left(\frac{1}{x} \times \frac{1}{1-x}\right) \left(\frac{1}{x-x^r}\right) - \left(\frac{r}{x-x^r}\right) = \frac{14}{9}$$

$$t^r - rt + 1 = \frac{14}{9} + 1 \Rightarrow (t-1)^r = \frac{149}{9} \Rightarrow t-1 = \pm \frac{14}{r}$$

$$\begin{cases} t = \frac{14}{r} \\ t = -\frac{14}{r} \end{cases}$$

$$\frac{1}{x-x^r} = \frac{14}{r} \quad x_1 = 1 \quad \frac{1}{x-x^r} = -\frac{14}{r} \quad x_2 = 1$$

$$1+1=2$$

$$\sqrt{x + \sqrt{-x^r + 4x^r + 20x - 1}} + \sqrt{x^r + \sqrt{-x^r + 4x - 1}} = x + r$$

✓ مقدار جدا

$$x + r \geq 0 \Rightarrow x \geq -r$$

$$-x^r + 4x - 1 \geq 0 \Rightarrow x^r - 4x + 1 \leq 0$$

$$(x-r)(x-r) \leq 0 \quad r \geq x \geq r$$

$$+ \quad - \quad +$$

^

$$x = r$$

$$-x^r + 4x^r + 20x - 1 \geq 0$$

مقدار جدا

$$x^r(r-x) + 20(x-r)$$

$$(r-x)(x^r - 20) = (r-x)(x+r)(x-r) \geq 0$$

$$- \quad + \quad - \quad +$$

$$-\infty < x \leq -r$$

$$r \leq x \leq 20$$

$$\sqrt{r + \sqrt{-4r + 4r + 100 - 1}} + \sqrt{14 + \sqrt{-14 + 4r - 1}}$$

$$r + r = 2r \checkmark$$

مقدار جدا

$$y = |x+r| + |x-1|$$

$$ry + x = 14 \Rightarrow ry = 14 - x \Rightarrow y = \frac{14-x}{r}$$

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$$\boxed{x = -r} \checkmark$$

$$-x - r - x + 1 = \frac{14-x}{r} \quad x + r - x + 1 = \frac{14-x}{r} \Rightarrow 4x + r = 14 - x \quad \checkmark$$

$$-4x - r = 14 - x \Rightarrow 4 = 14 - x \Rightarrow \boxed{x = 10}$$

$$\boxed{x = r} \checkmark$$

$$x = r \Rightarrow y = \frac{1V - x}{r} = \frac{1V - r}{r} = \Delta$$

$$x = -r \Rightarrow y = \frac{1V + r}{r} = V$$

$$\sqrt{(x_B - x_A)^2 + (y_B - y_A)^2} = \sqrt{\frac{(r + \varepsilon)^2}{r^2} + \frac{(\delta - r)^2}{r^2}} = \sqrt{K_2} = r\sqrt{1.1}$$

⑨ استقامت معرور تابع

$$y = \frac{1}{r}x + r \quad y = \sqrt{x^2 - rx + r} = \sqrt{(x - r)^2} = |x - r|$$

$$x \geq 0 \quad x - r$$

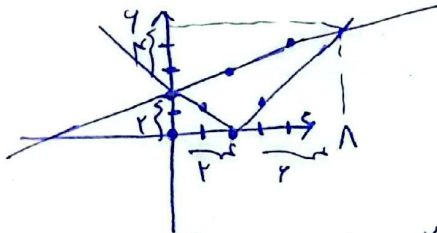
$$x \leq 0 \quad -x + r$$

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

$$\frac{r-1}{r}x = r \Rightarrow \boxed{x = \frac{r}{r-1}}$$

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

$$\Rightarrow \boxed{x = 0}$$



$$S - S_{\text{مستقیم}} = \frac{1}{2} \times 1 - \frac{r \times r}{2} - \frac{r \times r}{2} - \frac{r \times r}{2} = -r - 1 - 1 = -2r - 2$$

$$rA - r^2 = \boxed{1r}$$

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

$$\frac{x+q+x}{x(x+q)} = \frac{r}{x^2+qx} = \frac{1}{r} \Rightarrow \frac{r}{x} + 1 = \frac{r}{x} + \frac{q}{x} \Rightarrow r - r - 1 = -\frac{q}{x} \Rightarrow \frac{q}{x} = 1 \Rightarrow x = q$$

$$(x - r)(x + d) = 0$$

$$\boxed{x = r} \quad x = -d$$

⑩ این است که x و q برابر

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