

$$\frac{x}{y} = \frac{2}{r}$$

$$S = f \times d = 2.$$

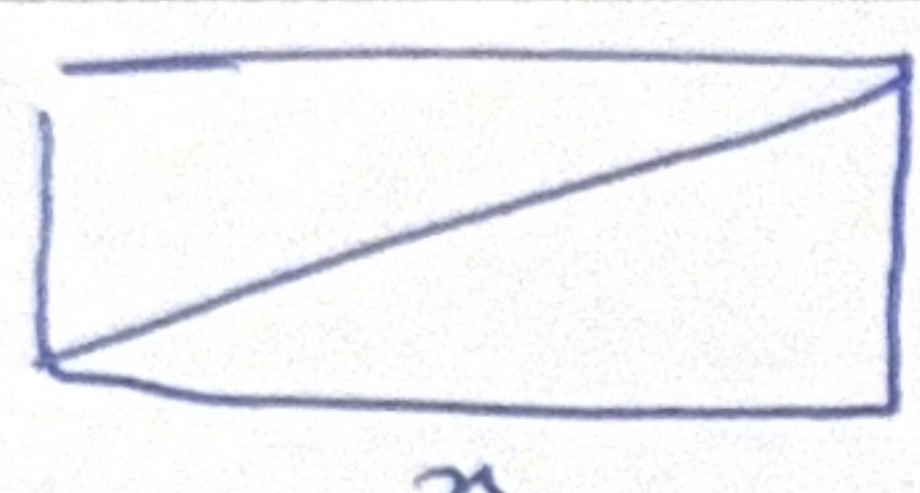
$$\frac{d+x}{2r} = \frac{1+\sqrt{5}}{r}$$

$$S' = (2\sqrt{5}+2) \times r$$

$$d+x = 2+2\sqrt{5}$$

$$\frac{S'}{S} = \frac{(2\sqrt{5}+2) \times r}{2} = \frac{2(\sqrt{5}+1)r}{2} = \frac{2(\sqrt{5}+1)}{2}$$

$$x = 2\sqrt{5} - 2 \xrightarrow{+2} 2\sqrt{5} + 2$$



$$e \rightarrow \sqrt{x^2 + y^2}$$

$$\frac{\sqrt{x^2 + y^2}}{x} = \frac{1+\sqrt{5}}{2}$$

توجه

$$\frac{x^2 + y^2}{x^2} = \frac{1+\sqrt{5}}{2}$$

$$(4+1\sqrt{5})$$

$$r(4+\sqrt{5})$$

$$1 + \frac{y^2}{x^2} = \frac{4+\sqrt{5}}{2}$$

$$\frac{y^2}{x^2} = \frac{1+\sqrt{5}}{2} \Rightarrow \frac{y}{x} = \frac{1+\sqrt{5}}{2}$$

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

$$\frac{a+1}{a} = ?$$

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

$$\frac{+14 \pm 12}{12} \Rightarrow 1) 2 \rightarrow 4 + \sqrt{4+4} = 2$$

$$4a^2 + 4a = 4 - 8a + 16a^2$$

$$2) \frac{2}{3} \rightarrow \frac{4}{3} + \sqrt{\frac{4}{9} + \frac{4}{9}} = 2$$

$$4a^2 - 12a + 4 = 0$$

$$\text{if } a = \frac{r}{v} \Rightarrow \frac{a+1}{a} = \frac{\frac{r}{v} + 1}{\frac{r}{v}} = \frac{r+v}{r} = \frac{4}{2}$$

$$\Delta = 12^2 - 16 = 144$$

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

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

$$\frac{x-1}{\sqrt{x-1}} \rightarrow \frac{\sqrt{x+1}(4-\sqrt{x-1}) - \sqrt{x+1}(4+\sqrt{x-1})}{9-(x-1)} = \frac{x-1}{\sqrt{x-1}}$$

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

$$\frac{-2\sqrt{x+1}(\sqrt{x-1})}{10-x} = \frac{\sqrt{x-1}(x-1)}{x-1} \Rightarrow 10-x = -2\sqrt{x+1}$$

$$\frac{24 \pm 8\sqrt{3}}{2} = \frac{12 \pm 4\sqrt{3}}{1} \checkmark$$

$$x^2 - 24x + 94 \Rightarrow \Delta = 24^2 - 4 \times 94 = 192$$

$$x=1 \text{ (ریشه دوم)}$$

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

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

$$\frac{r-n}{2\sqrt{r-n}} \rightarrow -2\sqrt{r-n}(\sqrt{r-n}) = r-n^2$$

$$-1 \cdot (r-n) = r-n^2 \Rightarrow n^2 - 24n + 10 = 0 \Rightarrow \Delta = 192$$

$$\frac{-10 \pm 12}{2} \Rightarrow \frac{-12}{2} = -6$$

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$$n^2 - 24n + 10 = 0 \Rightarrow \Delta = 192$$

$$\frac{-10 \pm 12}{2} \Rightarrow \frac{-12}{2} = -6$$

(ریشه دوم)

$$r(x^2 - x) + 1$$

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

$$9 - 14x = 14x^2 \Rightarrow 14x^2 + 14x - 9 = 0 \quad \Delta = 0^2 + 4 \cdot 14 \cdot 9 = 504 \Rightarrow \sqrt{\Delta} = 21\sqrt{2}$$

$$x = \frac{-14 \pm 21\sqrt{2}}{28} \Rightarrow x = \frac{-1 \pm \sqrt{2}}{2}$$

$$\frac{1}{x} + \frac{1}{1-x} = \frac{14}{9} \Rightarrow \frac{1}{\frac{-1 \pm \sqrt{2}}{2}} + \frac{1}{1 - \frac{-1 \pm \sqrt{2}}{2}} = \frac{14}{9}$$

$$\frac{2}{-1 \pm \sqrt{2}} + \frac{2}{1 \mp \sqrt{2}} = \frac{14}{9} \Rightarrow \frac{2(1 \mp \sqrt{2}) + 2(-1 \pm \sqrt{2})}{(-1 \pm \sqrt{2})(1 \mp \sqrt{2})} = \frac{14}{9}$$

$$\frac{2(1 \mp \sqrt{2} - 1 \pm \sqrt{2})}{1 - (\sqrt{2})^2} = \frac{14}{9} \Rightarrow \frac{0}{1 - 2} = \frac{14}{9} \Rightarrow 0 = \frac{14}{9}$$

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

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

$$x^2 - 2x + 1 = \frac{(x+r)^2}{4} \Rightarrow 4x^2 - 8x + 4 = x^2 + 2xr + r^2$$

$$3x^2 - (8+2r)x + (4-r^2) = 0$$

$$\Delta = (8+2r)^2 - 12(4-r^2) = 64 + 32r + 4r^2 - 48 + 12r^2 = 16 + 32r + 16r^2 = 16(r+2)^2$$

$$x = \frac{(8+2r) \pm 4(r+2)}{6} = \frac{4(2+r) \pm 4(r+2)}{3}$$

$$x = \frac{4(2+r) + 4(r+2)}{3} = \frac{8+4r+4r+8}{3} = \frac{8+8r}{3}$$

$$x = \frac{4(2+r) - 4(r+2)}{3} = \frac{8+4r-4r-8}{3} = 0$$

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

$$y + u = 14$$

$$y + u = -1$$

$$y - rx = 1$$

$$y + u = 14$$

$$u = 14 - y$$

$$x = r$$

$$y = 8 \rightarrow A$$

$$AB = \sqrt{(4)^2 + (r)^2} = \sqrt{16 + r^2} = \sqrt{r^2 + 16} = r\sqrt{1 + \frac{16}{r^2}}$$

$$y = \sqrt{x^2 - 2x + 1} \Rightarrow y = |x-1|$$

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

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

$$y + u = r$$

$$y - x = -r$$

$$y + \frac{1}{r}u = -r$$

$$y = -u + r$$

$$-\frac{1}{r}u = -r$$

$$u = r$$

$$y = 4$$

$$A$$

$$BC = \sqrt{16} = 4$$

$$AC = 4\sqrt{2}$$

$$\frac{4\sqrt{2} \times 4}{4} = 4\sqrt{2}$$

$$\frac{1}{t} + \frac{1}{t+9} = \frac{1}{r}$$

$$\frac{t+9+t}{t(t+9)} = \frac{1}{r} \Rightarrow \frac{2t+9}{t^2+9t} = \frac{1}{r}$$

$$r(2t+9) = t^2+9t$$

$$t^2 - (2r-9)t = 0$$

$$t(t - (2r-9)) = 0$$

$$t = 0$$

$$t = 2r-9$$