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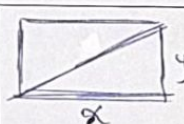
$$\frac{x}{y} = \frac{\omega}{r} \rightarrow y = \frac{\omega}{r} x \quad S_1 \cdot y = x \times \frac{\omega}{r} x = \frac{\omega}{r} x^2$$

$$\frac{x'}{y} = \frac{1+\sqrt{\omega}}{r} \rightarrow y = \frac{1+\sqrt{\omega}}{r} x' \quad S_2 \cdot y = x \cdot \frac{1+\sqrt{\omega}}{r} x = \frac{1+\sqrt{\omega}}{r} x^2$$

$$\frac{S_2}{S_1} = \frac{\frac{1+\sqrt{\omega}}{r} x^2}{\frac{\omega}{r} x^2} \rightarrow \frac{1+\sqrt{\omega}}{\omega} = \frac{r+2\sqrt{\omega}}{\omega}$$

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 $y = \sqrt{x^2 + d^2}$ $\frac{\sqrt{x^2 + d^2}}{x} = \frac{1+\sqrt{\omega}}{r}$ $y = \frac{x}{d}$ $\frac{\sqrt{x^2 + d^2}}{x} = \frac{1+\sqrt{\omega}}{r} \Rightarrow \frac{\sqrt{1 + \frac{d^2}{x^2}}}{1} = \frac{1+\sqrt{\omega}}{r}$

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$$\sqrt{1 + \frac{d^2}{x^2}} = \frac{1+\sqrt{\omega}}{r} \quad 1 + \frac{d^2}{x^2} = \frac{r^2 + 2\sqrt{\omega}r}{r^2} \quad \frac{1}{d^2} = \frac{r^2 + 2\sqrt{\omega}r}{r^2} \rightarrow \frac{r^2(1+\sqrt{\omega})}{r^2} \rightarrow$$

$$d^2 = \frac{1}{r+2\sqrt{\omega}} \quad \text{مختار نسبت طول به عرض} \rightarrow \left(\frac{x}{y}\right)^2 = \frac{1}{r+2\sqrt{\omega}}$$

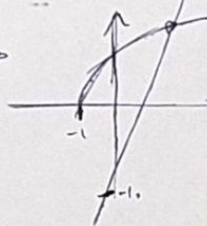
$$Pa + \sqrt{Pa^2 + Ka} = r \rightarrow \sqrt{Pa^2 + Ka} = r - Pa \quad Pa^2 + Ka = r^2 - 2Pa + Pa^2 \quad 2a^2 + Ka = r^2 - 2Pa + Pa^2$$

$$Va^2 - 14a + r = 0 \quad a^2 - 14a + r = 0 \quad (a-14)(a-r) \rightarrow a_1 = \frac{14}{2} = 7 \quad a_2 = \frac{r}{2}$$

$$\frac{a+1}{a} \rightarrow \frac{r+1}{r} = \frac{r}{r} \quad \frac{\frac{r}{2}+1}{\frac{r}{2}} = \frac{a}{\frac{r}{2}} = \frac{a}{r}$$

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

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



$$\frac{1}{\sqrt{r-x}+2} - \frac{1}{2-\sqrt{r-x}} = \frac{r-x}{\omega\sqrt{r-x}} \quad \frac{1}{\sqrt{t}+2} - \frac{1}{2-\sqrt{t}} = \frac{t}{\omega\sqrt{t}}$$

$$(2-\sqrt{t})(\omega\sqrt{t}) - (\sqrt{t}+2)(\omega\sqrt{t}) = (t)(\sqrt{t}+2)(2-\sqrt{t}) \rightarrow$$

$$\sqrt{t} - \omega t - \omega t - 10\sqrt{t} = 2 + \sqrt{t} - t^2 + 4t - 2 + \sqrt{t} \quad t^2 - 14t = 0 \quad t(t-14) = 0$$

$$t=0 \rightarrow r-x=0 \quad x=r \quad \text{مختار نسبت} \quad x=2 \quad \text{خرج عبارت داخل صفر کنند}$$

$$t=14 \rightarrow r-x=14 \quad x=-12 \times$$

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$$\frac{1}{x^r} + \frac{1}{(1-x)^r} = \frac{140}{9} \rightarrow \left(\frac{1}{x(1-x)} \right)^r - 2 \left(\frac{1}{x(1-x)} \right) = \frac{140}{9}$$

$$t - 2t = \frac{140}{9} \quad t - 2t + 1 = \frac{149}{9} \quad (t-1)^r = \frac{149}{9} \rightarrow t-1 = \frac{14}{9} \quad t = \frac{14}{9}$$

$$\rightarrow t-1 = -\frac{14}{9} \quad t = -\frac{10}{9}$$

$$\frac{1}{x(1-x)} = \frac{14}{9} \quad -x^r + x = \frac{14}{9} \quad x^r - x + \frac{14}{9} = 0 \quad (x - \frac{1}{r})(x - \frac{14}{r}) \quad S_1 = 1$$

$$\frac{1}{x(1-x)} = -\frac{10}{9} \quad -x^r + x = -\frac{10}{9} \quad x^r - x - \frac{10}{9} = 0 \quad S_2 = 1 \quad S_1 + S_2 = 2$$

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$$\sqrt{x} + \sqrt{-x^r + 4x + 10} + \sqrt{x^r + \sqrt{-x^r + 4x + 10}} = x + 2$$

$$-x^r + 4x + 10 \geq 0 \quad -(\alpha - \omega)(\alpha^r + 4\alpha + 10) \rightarrow -(\alpha - \omega)(\alpha + r)(\alpha + \omega) \geq 0$$

$$-x^r + 4x - 1 \geq 0 \quad (\alpha - 2)(\alpha - r) \leq 0$$

$$1) -x^r + 4x + 10 \geq 0 \rightarrow x \in [-1, 0] \cup [2, 5]$$

$$x + r \geq 0 \rightarrow x \in [-r, \infty)$$

$$① \cap ② \Rightarrow \text{مجموعه خالی نیست}$$

$$2) -x^r + 4x - 1 \geq 0 \rightarrow x \in [r, 5]$$

$$3) x + \sqrt{-x^r + 4x + 10} \geq 0 \rightarrow x \geq 0$$

$$4) x^r + \sqrt{-x^r + 4x + 10} \geq 0 \rightarrow x \geq -1$$

$$\alpha = r - r + r = 4$$

دو جواب دارد

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$$y = |x + r| + |x - 1| \quad 3y + x = 14 \quad y = \frac{14 - x}{3}$$

$-x - r - x + 1 = \frac{14 - x}{3}$	$x + r - x + 1 = \frac{14 - x}{3}$	$x + r + x - 1 = \frac{14 - x}{3}$
$-2x = 10$	$3 = 14 - x$	$4x = 14$
$x = -5$	$x = 11$	$x = 3.5$

$$AB = \sqrt{(r+r)^2 + (\omega - v)^2}$$

$$\Rightarrow \sqrt{3^2 + 4^2} = \sqrt{25} = 5$$

$3y - r = 14 \quad y = 5 \quad (-5, 5)$

$3y + r = 14 \quad y = 4 \quad (3, 4)$

$$y = \frac{1}{r}x + r \quad y = \sqrt{x^r - rx + r} \rightarrow \frac{1}{r}x + r = \sqrt{x^r - rx + r}$$

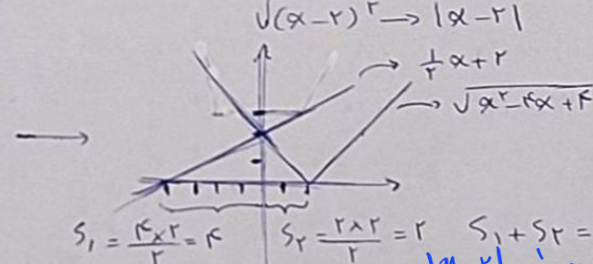
$\frac{1}{r}x + r = -x + r$	$\frac{1}{r}x + r = x - r$
$\frac{1}{r}x = 0$	$x = 1$
$x = 0$	

$\rightarrow \frac{1}{r}(1) + r = 4$

$(1, 4)$

$\frac{1}{r}(0) + r = 2$

$(0, 2)$



$S_1 = \frac{r \times r}{r} = r$

$S_2 = \frac{r \times r}{r} = r$

$S_1 + S_2 = 2$

$14 - r = \frac{1}{r}x + r$

$A(0, 2) \quad B(1, 1) \quad C(1, 4)$

$AB = r\sqrt{r}$

$BC = 4\sqrt{r}$

$S = \frac{r\sqrt{r} \times 4\sqrt{r}}{2} = 14$

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جواب 1-9

جواب 2-9

جواب 3-9

$$\frac{1}{t-9} + \frac{1}{t} = \frac{1}{r_0} \quad (r_0)(t) + (t-9)(r_0) = (t)(t-9)$$

$$r_0 t + r_0 t - 110 = t^2 - 9t \quad t^2 - 19t + 110 = 0 \quad (t - 10)(t - 11) = 0$$

$t = 10 \rightarrow \text{جواب} = t - 9 \Rightarrow 10 - 9 = 1$

$t = 11 \rightarrow \text{جواب} = t - 9 \Rightarrow 11 - 9 = 2$

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