

ساختار استثنائی - بازه رفت - ساختار استثنائی

(1)

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

$$\downarrow$$

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

$$\frac{x'}{y} = \frac{1+\sqrt{\omega}}{r}$$

$$\downarrow$$

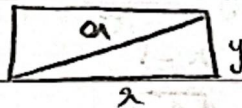
$$x' = \frac{(1+\sqrt{\omega})y}{r}$$

$$S = \frac{\omega y}{r} \times y = \frac{\omega y^2}{r}$$

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

$$\frac{S'}{S} = \frac{\frac{(1+\sqrt{\omega})y^2}{r}}{\frac{\omega y^2}{r}} = \frac{r+\sqrt{\omega}}{\omega}$$

$$\frac{a}{b} = \frac{1+\sqrt{\omega}}{r}$$



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

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

$$r x^2 + r y^2 = r x^2 + \sqrt{\omega} x^2$$

$$r y^2 = x^2 + \sqrt{\omega} x^2 = x^2 (1+\sqrt{\omega})$$

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

$$\frac{r-r\sqrt{\omega}}{1-\omega} = \frac{r(1-\sqrt{\omega})}{1-\omega} = \frac{\sqrt{\omega}-1}{-1-r}$$

$$ka + \sqrt{ka^2 + ka} = r \quad \frac{a+1}{a} = ?$$

(12)

$$\sqrt{ka^2 + ka} = r - ka$$

$$ka^2 + ka = r^2 - 2kra + k^2a^2$$

$$= va^2 - 14a + r$$

(5)

$$= a^2 - 14a + r$$

$$= (a-14)(a-r) \quad a = \frac{14}{v} = (14) \quad a = \frac{r}{v}$$

$$a = r \rightarrow \text{عنه (مستقيم)}$$

$$a = \frac{r}{v} \rightarrow \frac{\frac{r}{v}}{\frac{r}{v}} = \frac{r}{r} = \frac{a+1}{a}$$

(نيل درجہ صفر)

$$\frac{\sqrt{a+1}}{\sqrt{a-1} + r} - \frac{\sqrt{a+1}}{r - \sqrt{a-1}} = \frac{a-1}{\sqrt{a-1}}$$

(14)

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

(5)

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

$$-r\sqrt{a+1} = 1-a$$

$$a - r\sqrt{a+1} - 1 = 0$$

$$a + 1 - r\sqrt{a+1} - 1 = 0$$

$$t^2 - rt - 1 = 0 \quad t = \frac{r \pm \sqrt{r^2 + 4}}{2}$$

$$\Delta = r^2 - 4(1)(-1) = r^2 + 4$$

$$t = \sqrt{a-1} \rightarrow t \geq 0$$

$$t = \frac{r + \sqrt{r^2 + 4}}{2} \quad \checkmark$$

مستقيم

Scanned with

$$\frac{1}{\sqrt{r-x}+r} - \frac{1}{r-\sqrt{r-x}} = \frac{r-x}{\Delta \sqrt{r-x}} = \frac{(\sqrt{r-x})^4}{\Delta \sqrt{r-x}} \quad \boxed{A+P} \quad \textcircled{A}$$

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

-10 = r+x \rightarrow \boxed{x = -12}

نقطة مست

$$\frac{1}{2^t} + \frac{1}{(1-2)^t} = \frac{14}{9} \quad \textcircled{4}$$

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

$$\pm r - r \pm \frac{14}{9} \rightarrow t^r - r \pm 1 = \frac{14}{9} + 1$$

$$(t-1)^r = -$$

$$t-1 = \pm \frac{1^r}{r} \rightarrow \begin{cases} t = \frac{1^r}{r} + 1 = \frac{14}{r} \\ t = 1 - \frac{1^r}{r} = \frac{-10}{r} \end{cases} \quad (t-1)^r = \frac{14}{9}$$

$$\frac{14}{r} - \frac{-10}{r} = \frac{9}{r} = \textcircled{P}$$

$$\sqrt{x} + \sqrt{-x^r + K_2 x + K_3 x - 100} + \sqrt{x^r} + \sqrt{-x^r + 4x - 1} = 21 + r \quad \textcircled{V}$$

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

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

$$0 \geq (x-K)(x-r)$$

$$\frac{r}{+} \frac{K}{-} \frac{r}{+}$$

$$x \in [r, K] \quad I$$

$$-x^r + K_2 x + r \Delta x - 100 \geq 0$$

$$(r \Delta x - x^r) + (K_2 x - 100) \geq 0$$

$$x(r \Delta - x^r) - K(-x^r + r \Delta) \geq 0$$

$$x \in (-\infty, -\Delta] \cup [K, \infty) \quad II$$

$$(x-K)(r \Delta - x^r) \geq 0 \rightarrow$$

$$\begin{matrix} -\Delta & r & \Delta \\ + & - & + \\ \text{Sub} & & \end{matrix}$$

$$I \wedge II \rightarrow x = k$$

$$\sqrt{k + \sqrt{-4k + 4k + 100}} + \sqrt{14k - 14 + 4k} = k + 1$$

$$\rightarrow x = k$$

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

(A)

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

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

$$3|x+1| + 3|x-1| + x - 14 = 0$$

$-3x - 4 - 3x + 3$ $+ x - 14$ $= -5x - 10$	$3x + 4 - 3x + 3$ $+ x - 14$ $= x - 7$	$3(x+1) + 3x - 3$ $+ x - 14 = 7x - 10$
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$$\downarrow$$

$$x = -2$$

$$\downarrow$$

$$x = 1$$

$$\wedge \notin (-2, 1)$$

$$x = 1$$

$$A(1, 4)$$

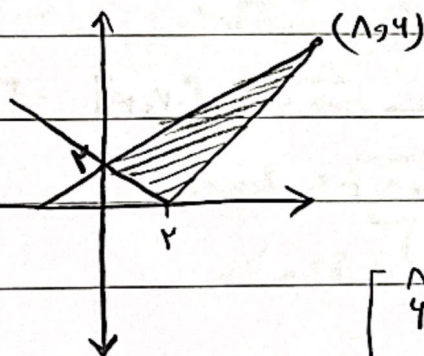
$$B(-2, 1)$$

$$AB = \sqrt{(1-(-2))^2 + (4-1)^2} = 5$$

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

$$y = \sqrt{x^2 - 4x + 4} = \sqrt{(x-2)^2} = |x-2|$$

(9)



$$-2 + x \leq x - 2$$

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

$$x^2 - 4 = x + 1$$

$$\begin{bmatrix} 1 & 0 & 1 \\ 4 & 1 & 0 \\ 1 & 1 & 1 \end{bmatrix} = \frac{1}{1} \times 1 \times 1 = 1 \quad x = 1$$

Scanned with

$$\text{فرق} \rightarrow n \quad \xrightarrow{\text{تفاضل}} \quad \frac{1}{n}$$

(10)

$$\text{فرق} \rightarrow n+4 \quad \frac{1}{n+4}$$

$$\frac{1}{n} + \frac{1}{n+4} = \frac{1}{P_0}$$

9

$$\frac{P_0 n + 1A_0 + P_0 n}{P_0 n(n+4)} = \frac{n(n+4)}{P_0 n(n+4)}$$

$$P_0 n + 1A_0 = n^2 + 4n \rightarrow n^2 - P_0 n - 1A_0 = 0$$

$$(n - 4)(n + 4) = 0$$

$$n = 4$$

$$n = -4$$

ووجه

تفاضل 4 ←