

صفر

تکلیف قبل رو فرستادی

یازدهم سر 13

کابل جادویی

فرض δ $\rightarrow$ δu واقع $\rightarrow$ $\frac{\delta u + y}{fu}$, $\frac{\sqrt{\delta} + 1}{2} \rightarrow \frac{1 \cdot u + 2y}{2} = fu + f\sqrt{\delta}u$ سرکتابی $\frac{\sqrt{\delta} + 1}{2}$

$\frac{g'}{g} = \frac{(\delta u + y)(fu)}{(\delta u)(fu)} \rightarrow \frac{\delta u + y}{\delta u} \rightarrow 1 + \frac{y}{\delta u} \rightarrow \frac{2\sqrt{\delta} + 2}{\delta}$ $\delta u + y = 2\sqrt{\delta}u + 2u \rightarrow \frac{y}{u} = 2\sqrt{\delta} - 2$
 $\hookrightarrow y = u(2\sqrt{\delta} - 2)$

$\frac{y}{u} = \delta \rightarrow \frac{y}{\delta u} = \frac{1}{\delta}$ حل $2\sqrt{\delta} - 2$

$\frac{r}{u} = \frac{1 + \sqrt{\delta}}{2} \rightarrow y^2 + u^2 = r^2 \rightarrow \frac{u^2(2 + 2\sqrt{\delta})}{4} \rightarrow y^2 = \frac{u^2(4 + 2\sqrt{\delta})}{4} - 1 = \frac{u^2(1 + \sqrt{\delta})}{2}$

$\rightarrow (\frac{u}{2})^2 = \frac{1}{1 + \sqrt{\delta}} \rightarrow \boxed{\frac{\sqrt{\delta} - 1}{2}}$

$2a - 2 = -\sqrt{4a^2 + 4a} \xrightarrow{\text{توان 2}} 4a^2 - 4a + 4 = 4a^2 + 4a \rightarrow 4a^2 - 4a + 4 = 4a^2 + 4a$ $\frac{r}{2} \checkmark$

$\rightarrow 4a^2 - 4a + 4 = 4a^2 + 4a$ $\times$ جواب نیست $\leftarrow 2$

$\frac{a+1}{a} \xrightarrow{a=\frac{r}{2}} \boxed{\frac{9}{2}}$

فرض $\sqrt{u+1} = t$ $\sqrt{u-1} = b$ $\frac{t}{b+r} - \frac{t}{r-b} = b \rightarrow \frac{-2+b}{9-b^2} = z \rightarrow 2t = -9 + z^2$

$\xrightarrow{\text{جابجایی } b, t} 2(\sqrt{u+1}) = (\sqrt{u-1})^2 - 9 \rightarrow 2\sqrt{u+1} = u - 1 - 9 = u - 10$ $\xrightarrow{\text{توان 2}} 4u + 4 = u^2 + 10u - 20u$

$\rightarrow u^2 - 24u + 24 = 0$ $\Delta = 144$

$12 + 4\sqrt{3} > 10$ $\checkmark$ $u \geq 10$ (I) $\times$ $12 - 4\sqrt{3} \approx 10$

یک جواب مثبت

خرج مشترک $\frac{\sqrt{2-u} - \sqrt{2-u}}{2 - 2 + u} = \frac{2-u}{2\sqrt{2-u}}$ (خرج مشترک)

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

$u^2 + 10u - 24 = 0$ $\Delta = 100 + 96 = 196$

$10 \pm \sqrt{196} = 10 \pm 14$ $\times$ $10 - 14 = -4$

صفر ریشه مثبت

$$\frac{1}{u^r} + \frac{1}{(1-u)^r} \xrightarrow{\text{مخرج مشترك}} \frac{(1-u)^r + u^r}{u^r(1-u)^r} \rightarrow \frac{1 - 2u + u^r + u^r}{(u(1-u))^r} \rightarrow \frac{2(u^r - u) + 1}{(u - u^r)^r} = \frac{17}{9}$$

$$\frac{17}{9} = \frac{r+1}{r} \rightarrow 17r = 9r + 9 \rightarrow 17r - 9r = 9 \rightarrow 8r = 9 \rightarrow r = \frac{9}{8}$$

$$\frac{r}{17} = u^r - u \rightarrow u^r - u - \frac{r}{17} = 0 \rightarrow \delta_1$$

$$-\frac{r}{17} = u^r - u \rightarrow u^r - u + \frac{r}{17} = 0 \rightarrow \delta_2$$

$$\delta_T = 1 + \sqrt{2}$$

$$\frac{1 \pm \sqrt{\Delta}}{2} \quad \frac{1 + \sqrt{\Delta}}{2} + \frac{1 - \sqrt{\Delta}}{2}$$

(V) $\frac{r}{r} = 1$

$$z = \sqrt{y} \rightarrow z^2 = y \rightarrow u + 2z \rightarrow u \geq -2 \text{ (I)}$$

(V) $\frac{r}{r} = 1$

$$-u^r + 2u - 1 \geq \frac{r}{2} \quad \frac{r}{2} \quad u \geq \frac{r}{2} \quad u^r \geq \frac{r}{2} \text{ (IV)}$$

$$-u^r + 2u^r + 2u - 1 \geq \frac{-2}{+2} \frac{r}{-2} \frac{2}{+2} \text{ (III)} \Rightarrow I \cap II \cap III \cap IV \cap V = \{r\}$$

(A)

$$\begin{cases} y = |u+2| + |u-1| \\ y = -\frac{2u}{r} + \frac{17}{r} \end{cases} \xrightarrow{\text{جست و پیمایی}} y = 1$$

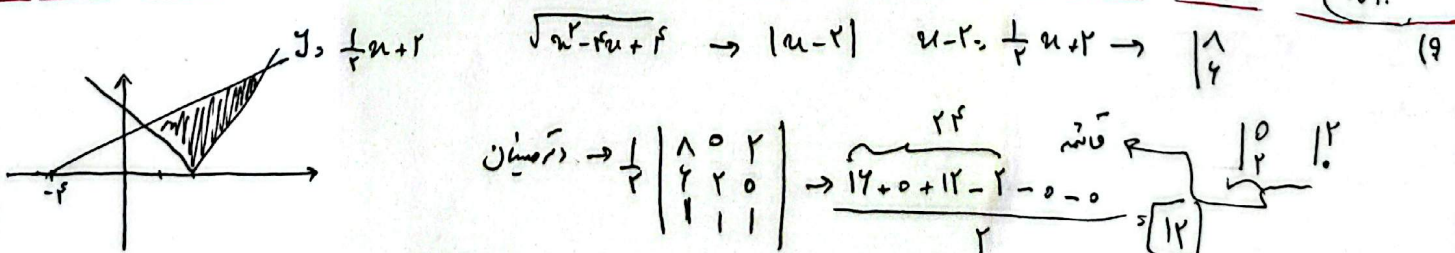
$$\Rightarrow y = 1 = -\frac{2u}{r} + \frac{17}{r} \xrightarrow{\times r} ru + 17 = -2u + 17 \rightarrow u = 2$$

y = 0

$$\begin{cases} y = |u+2| + |u+1| \\ y = -\frac{2u}{r} + \frac{17}{r} \end{cases} \xrightarrow{\text{جست و پیمایی}} y = 1$$

$$\Rightarrow -4u - 3 = 17 - u \rightarrow \frac{3}{4} = \frac{20}{u} \rightarrow \frac{3}{4} = \frac{20}{u}$$

(A) $\frac{1}{2}$



$$\frac{1}{r} \begin{vmatrix} 1 & 0 & 2 \\ 2 & 2 & 0 \\ 1 & 1 & 1 \end{vmatrix} \rightarrow \frac{17 + 0 + 12 - 2 - 0 - 0}{r} = \frac{27}{r}$$

$$\frac{1}{u} + \frac{1}{u+9} = \frac{1}{r} \rightarrow \frac{u+9}{u(u+9)} = \frac{1}{r} \rightarrow \frac{u+9}{u} = \frac{u+9}{r} \rightarrow u = r$$

(B) $\frac{1}{r}$

$$u+9 \leftarrow \frac{1}{r} \quad u \leftarrow \frac{1}{r}$$