

$$y = \frac{2x-10}{1-x} \xrightarrow{\text{مقسوم علیه}} \frac{-2x-10}{1+x} \xrightarrow{\text{مقسوم علیه}} \frac{2x+10}{x+1} \quad (9)$$

$$\xrightarrow{\text{مقسوم علیه}} \frac{2x+10}{x-1} \xrightarrow{\text{مقسوم علیه}} \frac{2x+9}{x-1} = f(x) \rightarrow$$

$$f(x) = \frac{x+9}{x-1} = \frac{2x+9}{x-1} \quad x^2 - 2x - 9 = 2x^2 + 2x - 12$$

$$\frac{-V}{2} = (-1, 2)$$

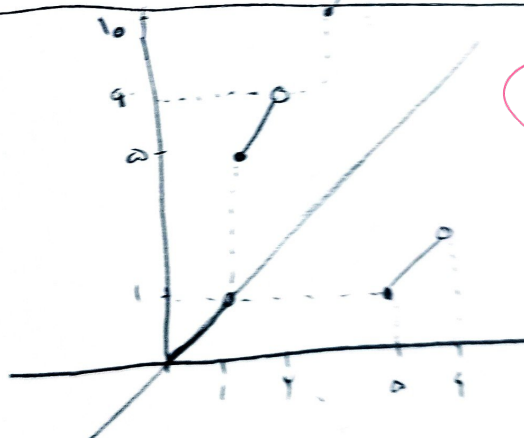
$$\Rightarrow x^2 + 4x - 9 = 0 \quad S = \frac{-b}{2a}$$

$$x^2 + 2x - 9 = 2x^2 + 2x - 12 \rightarrow x^2 - 4x - 3 = 0 \quad S = \frac{-b}{a} = (1, 2)$$

$$f(x) = x + \varepsilon[x]$$

$$\text{if } \varepsilon \rightarrow (2x - \frac{1}{2}x)$$

$$\text{if } \neq$$



$$[y] \in \omega[n] \rightarrow [n] = \frac{[y]}{S} \rightarrow f^{-1}(y) \in n - \cdot / \wedge [n]$$

$$f(n) - g(n) = n + \varepsilon[n] - n + \cdot / \wedge [n] \in \varepsilon, \wedge [n]$$

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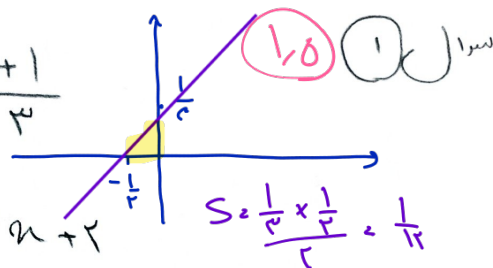
1.5

$$y = \frac{3x-1}{2} \xrightarrow{0,1,2} \frac{2x+1}{3}$$

$$\frac{3x-1}{2} = \frac{2x+1}{3}$$

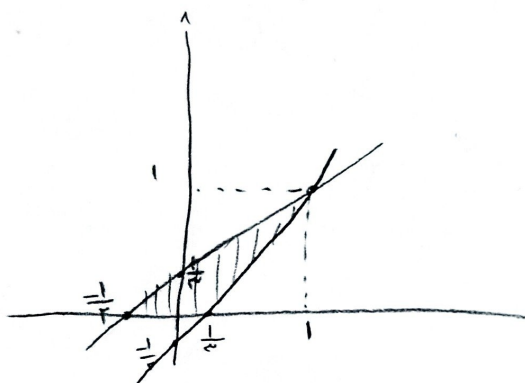
$$4x-3 = 2x+2$$

$$2x = 5$$



$$\frac{2x+1}{3} = 0 \rightarrow x = -\frac{1}{2}, y = 0$$

$$\frac{3x-1}{2} = 0 \rightarrow x = \frac{1}{3}, y = 0$$



$$\frac{1}{3} + \frac{1}{2} = \frac{5}{6} = 0.83$$

$$\frac{1}{2} \rightarrow (0.5)$$

$$\frac{1 \times \frac{5}{6}}{2} = \frac{5}{12}$$

الف) $y = x^2 - 2x + 3$ $x \in [1, +\infty)$ $\frac{-b}{2a} = \frac{2}{2} = 1$

$$x^2 - 2x + 3 = 0$$

$$x = 1 \text{ (نقطه به ازای } x \text{ در } [1, +\infty) \text{)}$$

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

$$x \geq 1$$

گزینه س

ب) $\phi^{-1}(u) = \sqrt{u-2+1}$ $D\phi^{-1} \subset \mathbb{R} \subset [4, +\infty)$

if 2
if 2

$$f(x) = 2x - \sqrt{1 - 4x(\epsilon - x)}$$

گراف نشان

$$2x - \sqrt{\epsilon(\epsilon - x)(\epsilon - x)}$$

$$2x - |2x - \epsilon|$$

$$2x - 2(\epsilon - x)$$

$$\frac{\epsilon x - 1}{1} \rightarrow \frac{x + 1}{\epsilon}$$

$$2x - 1 + 2x$$

$$x=0 \rightarrow y=2$$

$$\frac{x+1}{\epsilon} = 0$$

$$2x + 1 - 2x = 1$$

$$\begin{cases} \epsilon & x \geq r \\ \epsilon x - 1 & x < r \end{cases}$$

$$x \geq r$$

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

$$\frac{\lambda x}{2} = 1$$

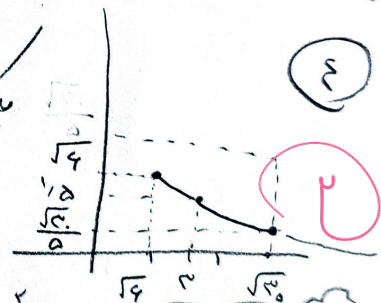
$$S < \frac{x}{r} < 1$$

$$y = \frac{x}{\sqrt{x^2 - a}}$$

$$\sqrt{a}$$

$$y' = \frac{x'}{x^2 - a}$$

$$\begin{cases} x' > \sqrt{a} \\ x' < -\sqrt{a} \end{cases}$$

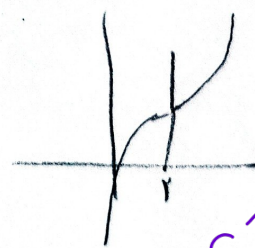


$$y' x' - a y' = x' \rightarrow (y' - 1)x' - a y' = 0 \rightarrow x' = \frac{a y'}{y' - 1} \rightarrow x = \sqrt{\frac{a y'}{y' - 1}}$$

$$g(x) = \begin{cases} x' - \epsilon x + k & x \geq r \\ -x' + \epsilon x + k & x < r \end{cases}$$

$$-\epsilon x + k < \epsilon - x + k$$

$$x' < -1 \rightarrow k < -4$$



میان

$$f(z) = 3z + |a|$$

$$f^{-1}(u) = \begin{cases} \frac{u}{3} & \text{nd.} \\ \frac{u}{3} & \text{nc.} \end{cases}$$

$$\xrightarrow{a > 0} \frac{\varepsilon z}{1} \rightarrow \frac{1}{\varepsilon} z$$

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ما باید به گونه ای تعریف شود که سبب فاصله ها از

$$\frac{3}{1} z + \frac{1}{1} |a| \xrightarrow{\text{منها کسر باشد}} \frac{3}{1} z \rightarrow \frac{1}{4} z \Rightarrow \frac{3}{1} \times \frac{1}{1} = \frac{-n}{4\varepsilon}$$

$$f(z) = \frac{3z + \varepsilon}{z + m} \xrightarrow{r} \frac{1_0}{r + m} = -1_0 \rightarrow m = -3$$

⑤

$$f^{-1}(z) = \frac{3z + \varepsilon}{z - 3}$$

$$\Rightarrow \frac{3z + \varepsilon}{z - 3}$$

$$f(z) = f^{-1}(z)$$

$$z + \frac{3z + \varepsilon}{z - 3} = z \Rightarrow \frac{3z + \varepsilon}{z - 3} = 0 \Rightarrow z = -\frac{\varepsilon}{3}$$

$$f(r - 2z) = r - g\left(\frac{u}{r}\right) \rightarrow f(r - 2z) - r = -g\left(\frac{u}{r}\right)$$

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$$\begin{aligned} r - 2z &= t \\ -2z &= t + r \\ z &= \frac{t + r}{-2} \rightarrow \frac{z}{r} = \frac{t + r}{-2r} \end{aligned}$$

$$f(t) - r = -g\left(\frac{t + r}{-2r}\right)$$

$$f^{-1}(r - 2z) + g^{-1}(z) = 3$$

$$f^{-1}(t) = r - 2z \rightarrow z = \frac{r - f^{-1}(t)}{2} \quad bc - r$$

$$g^{-1}(r - t) = \frac{u}{r} \rightarrow u = rg^{-1}(r - t) \rightarrow$$