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$$y = -\frac{1}{3}x^2 + \frac{2}{3}x + 1 \rightarrow a = -\frac{1}{3} \Rightarrow x_{\text{y}} = (x, y) \quad (1)$$

$$y = -\frac{1}{3}(x-1)^2 + 1 \rightarrow -\frac{1}{3}(x-1)^2 + 1 = 0 \quad (x-1)^2 = 3$$

$$x = 1 \pm \sqrt{3}$$

$x = 1 + \sqrt{3}$
 $x = 1 - \sqrt{3}$

$f(x), 1$ $f'(x), 1 - 2f(3x+2)$

$$y = 1 - 2f\left(3\left(-\frac{1}{3}\right) + 2\right) \quad (2) \quad 3x+2 = 1 \quad 3x = -1 \quad x = -\frac{1}{3}$$

$$y' = 1 - 2f(x) = -1$$

$$y = 3 - \sqrt{2x} \rightarrow 3 - \sqrt{2(x+1)} \rightarrow \sqrt{2x+2} - 3 \rightarrow \sqrt{2x+2} + 2 \quad (3)$$

$$\sqrt{2x+2} + 2 = \frac{1}{2} \quad \sqrt{2x+2} = -\frac{3}{2} \quad 2x+2 = \frac{9}{4} \quad 2x = -\frac{1}{2} \quad x = -\frac{1}{4}$$

$Df = [a, b]$ $Dg = [-1, b]$ $y = f(x-1) + g(x+1)$

$$a(x-1) < \varepsilon, a+1 < x < b \quad (1) \quad -1 < x+1 < b, -2 < x < b-1$$

$$(1) \cap (2) = (-2, b) \quad a+1 = -2 \quad a = -3$$

$$D = -1 = a \quad b = 4 \quad a - b = -5$$

$$y_1 = f\left(\frac{1}{r} + 1\right), Dy_1 = [-r, \omega] \rightarrow Df(u) = \left[-\frac{1}{r}, \frac{1}{r}\right] \quad (5)$$

$$y_2 = \sqrt{|r f(u) - r|} \quad Dy_2 = Df(u) : \left[-\frac{1}{r}, \frac{1}{r}\right] \quad (15)$$

$$Ry_1 \rightarrow Rf(u) = [-1, 4] \rightarrow r(f(u) - r) = [-\omega, 1] \quad \text{مترددات}$$

$$\Rightarrow [1, \omega] \xrightarrow{\text{الحد الأدنى}} [1, \sqrt{\omega}] = Ry_2 \rightarrow [0, \sqrt{\omega}]$$

$$\frac{u}{r} \left[\frac{r}{b} u \right] \xrightarrow{\text{مشتق}} -\frac{b}{r} \times \left[\frac{r}{b} \times \frac{b}{r} \right] = \frac{1}{\varepsilon} \quad (4)$$

نقطة $\frac{b}{r}$ و $\frac{r}{b}$ هما نقطتان متقابلتان

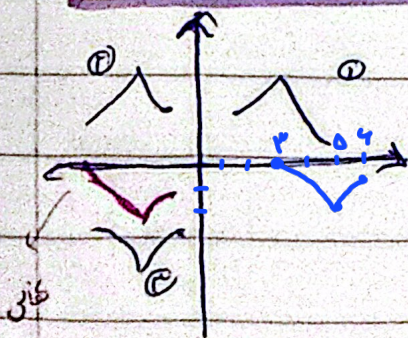
$$a = \frac{r}{b} \xrightarrow{b=1} \boxed{a > r} \rightarrow a = -r$$

$$b - a = 1 - r = -1 \quad \checkmark \text{ قابل قبول است}$$

$$b - a = r$$

$$f(u) = \log \frac{u}{r} \xrightarrow{\text{مشتق}} f'(u) = \log \frac{u+r}{r} \xrightarrow{\text{مشتق}} f'(u) = -\log \frac{u+r}{r} \quad (7)$$

$$\xrightarrow{\text{مشتق}} -\log \frac{u+r}{r} + r = g(u) \quad \begin{cases} g(1-\varepsilon) = -\log \frac{1}{r} + r = -1 \\ g(1-4\varepsilon) = -\log \frac{4\varepsilon}{r} + r = -r \end{cases} \quad (2)$$



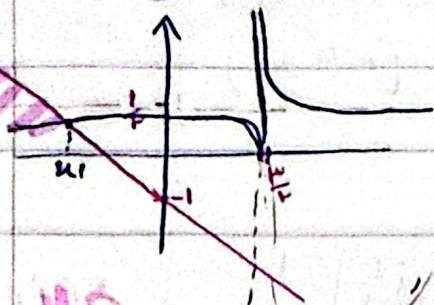
$$y_1 = r - f(r-u) \rightarrow r - f(1-u) \quad (1)$$

$$r - f(u-1) \rightarrow f(u-1) - r \rightarrow f(u-1) - 1 \quad (1)$$

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$$f(u) = \left| \frac{u+1}{2u+1} \right| \xrightarrow[\text{بیٲاں لائے}]{\text{۲ لائے}} f'(u) = \left| \frac{u-1}{2u-3} \right| + 1 = g(u) \quad (9)$$

$$u + g(u) < 0 \quad \left| \frac{u-1}{2u-3} \right| < -u-1 \quad \text{شکل ۳ لائے}$$



$$u' \Rightarrow \left| \frac{u'-1}{2u'-3} \right| = -u'-1$$

$$u'-1 = -2u'+u'+3 \quad \oplus \quad \frac{u'-1}{2u'-3} > -u'-1$$

$$2u' = 4 \quad u' = 2 \quad u' = \pm \sqrt{2}$$

$$\text{جواب} = (-\infty, -\sqrt{2}) \quad \text{مورد قبول است} \quad (10)$$

$$g(u) = \sqrt{2u f(u) - f(u)^2} \xrightarrow{\text{دائے}} f(u)(2u - f(u)) \quad (11)$$

$$- \quad 0 \quad + \quad 0 \quad -$$

شکل ۳ لائے صیغہ لائے $f(u) = 0 \quad u = 0 \quad f(u) = 2u$
 علامت $\Rightarrow$ $\{1, 2\}$ $\Rightarrow$ $\{3\}$ $\Rightarrow$ $\{1, 2\}$ $\Rightarrow$ $\{3\}$