

$$Df = [-2, 1] \rightarrow -2 \leq \frac{3u+2}{5} \leq +1$$

$$\Rightarrow -10 \leq 3u+2 \leq 5 \rightarrow -12 \leq 3u \leq 3 \xrightarrow{\div 3} \boxed{-4 \leq u \leq +1} \quad (1) \quad (2)$$

$$\rightarrow \boxed{u \in [-4, +1]} \quad (2)$$

$$-2 \leq u \leq +1 \Rightarrow -4 \leq 3u \leq +3 \rightarrow \boxed{-1 \leq 3u-2 \leq +1} \quad (2) \quad (2)$$

$$\rightarrow \boxed{3u-2 \in [-1, +1]} \quad (2)$$

$$\rightarrow 1 \leq u \leq +2 \rightarrow -2 \leq 3u+1 \leq 7 \quad (1, 2, 3)$$

$$\Rightarrow -1 \leq \frac{3u+1}{2} \leq 3 \rightarrow -2 \leq 3u+1 \leq 6 \rightarrow -3 \leq 3u \leq 5 \rightarrow -1 \leq u \leq \frac{5}{3} \quad (2)$$

$$\Rightarrow \boxed{-\frac{3}{5} \leq u \leq \frac{5}{3}} \rightarrow u \in \left(-\frac{3}{5}, \frac{5}{3}\right) \quad (2)$$

$$Df \in [-1, +2] \rightarrow -1 \leq 3u+1 \leq 2 \quad (2) \quad (3)$$

$$\Rightarrow -2 \leq 3u \leq +1 \rightarrow \frac{-2}{3} \leq u \leq \frac{+1}{3}$$

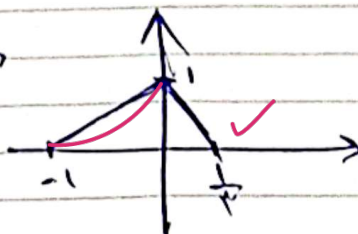
$$\rightarrow f' = 2f(3u+1)+3$$



$$Df \in [-1, 0] \rightarrow 1 \leq 2-3u \leq 5 \rightarrow -1 \leq -3u \leq +3 \quad (2) \quad (3)$$

$$\xrightarrow{\div -3} \frac{+1}{3} \geq u \geq -1 \rightarrow$$

ایفان



احمد بن محمد خوارزمي (دانشمند ایرانی)

سه شنبه

۲۱ جمادی الثانی ۱۴۴۸

1 Dec. 2026

۱۴۰۵

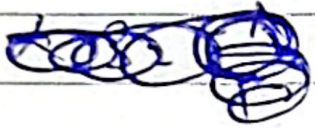
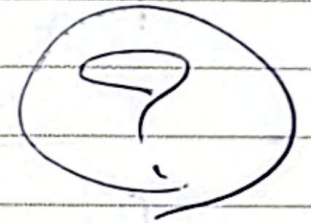
$$x_0 = \frac{2}{5} + \sqrt{\frac{2}{5} - 2\left(-\frac{1}{5}\right)(1)}$$

$$y = -\frac{1}{5}x^2 + \frac{2}{5}x + 1 \rightarrow x_s = \frac{-\frac{2}{5}}{-\frac{2}{5}} = \frac{2}{5} \rightarrow y_s = \frac{21}{25}$$

$$\left(\frac{10}{5}, \frac{21}{25}\right) \rightarrow \left(\frac{10}{5}, \frac{21}{25}\right)$$

$$\Delta x_s \rightarrow + \frac{10}{5}$$

$$\Delta y_s \rightarrow + \frac{21}{25}$$



$$x_m + 2 / (198)$$

$$x \Rightarrow \left(\frac{1}{5}, 9\right) \rightarrow \alpha, \beta = \frac{1}{5}$$

صفحه آخر

امید حسین یزدانزاد (دوازدهم) به A کد پی

$$f \Rightarrow a < n-1 \leq 4 \rightarrow a+1 < n \leq 5$$

(۲)

(A)

$$g \Rightarrow -1 \leq n+1 < b \rightarrow -2 \leq n < b-1$$

$$\left. \begin{array}{l} (-2, 5) \Rightarrow b-1 \geq 5 \rightarrow b = 6 \\ \hookrightarrow a+1 = -2 \rightarrow a = -3 \end{array} \right\} \rightarrow a - b = -2 - 6 = -8$$

$$Df_1 = Df_2 = [-\infty, 0]$$

④ (۱۵)

$$Rf \rightarrow [-1, 1] \rightarrow [-\infty, +1] \xrightarrow{\text{قرینگی}} [0, 1] \\ \rightarrow Rg = [0, 1]$$

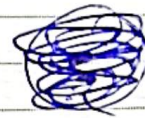
صفحه آخر

$$f(u) = \left| \frac{u+1}{2u+1} \right|$$

⑤ (۱۵)

$$\rightarrow g(u) = \left| \frac{(u-2)A}{2(u-2)+1} \right| + 1 = \left| \frac{u-2}{2u-3} \right| + 1$$

$$\frac{u-2}{2u-3} + 1 = \frac{u-2+2u-3}{2u-3} = \frac{3u-5}{2u-3}$$



$$\hookrightarrow \frac{3u-5}{2u-3} + u = \frac{3u^2-5}{2u-3} \rightarrow \frac{-\sqrt{2} + \sqrt{2}}{2} + 1 + \frac{u}{2}$$

$$\hookrightarrow \frac{u-2}{2u-3} + u = \frac{3u^2-5}{2u-3} \rightarrow \frac{1+\sqrt{5}}{2} + \frac{u}{2} + \frac{1+\sqrt{5}}{2}$$

$$\hookrightarrow \frac{3u-5}{2u-3} + u = \frac{3u^2-5}{2u-3} \rightarrow \frac{-\sqrt{2} + \sqrt{2}}{2} + 1 + \frac{u}{2}$$

$$\Rightarrow \text{جواب: } (-\infty, -\sqrt{2}) \cup (-\sqrt{2}, \frac{1+\sqrt{5}}{2}) \cup (\frac{1+\sqrt{5}}{2}, \infty)$$

صفحه آخر

رأس: $(h, k) \xrightarrow{\text{معادله خط}} y = a(n-h)^2 + k = -\frac{1}{3}n^2 + \frac{2}{3}n + 1 \rightarrow a = -\frac{1}{3}$ -9

رأس: $(4, 3) \rightarrow y = -\frac{1}{3}(n-4)^2 + 3 \xrightarrow{y=0} -\frac{1}{3}(n-4)^2 = -3 \rightarrow \begin{cases} n=7 \\ n=1 \end{cases}$

رأس $\left| \begin{matrix} 1 \\ 4 \end{matrix} \right| \Rightarrow \begin{cases} 2n+2=1 \rightarrow n=-\frac{1}{2} \Rightarrow \alpha = -\frac{1}{2} \\ y=1-2f(1)=1-2(4)=-7 \Rightarrow \beta=-7 \end{cases} \Rightarrow \alpha\beta = \boxed{\frac{7}{2}}$ -7

$D_{y_1} = [-3, 5] \rightarrow -3 \leq n \leq 5 \rightarrow -\frac{1}{2} \leq \frac{n}{2} + 1 \leq \frac{5}{2} \Rightarrow D_f = \left[-\frac{1}{2}, \frac{5}{2}\right]$ -9

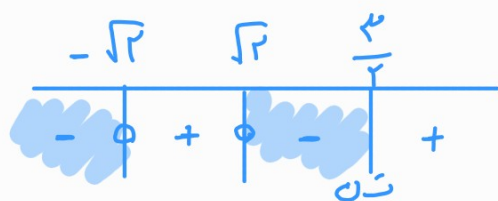
$R_{y_1} = [-1, 2] \rightarrow -1 \leq f \leq 2 \rightarrow -5 \leq 2f-3 \leq 1 \rightarrow 0 \leq |2f-3| \leq 5$

$0 \leq \sqrt{|2f-3|} \leq \sqrt{5} \Rightarrow R_f = [0, \sqrt{5}]$

$g(n) = \left| \frac{(n-2)+1}{2(n-2)+1} \right| + 1 = \left| \frac{n-1}{2n-3} \right| + 1$ -10

$n + g(n) < 0 \rightarrow \left| \frac{n-1}{2n-3} \right| < -1-n$ از به قدر مطلق بزرگتر شده پس باید مثبت باشد: $-1-n > 0 \rightarrow n < -1$

$\xrightarrow{n < -1} \frac{n-1}{2n-3} < -1-n \rightarrow \frac{2n^2-4}{2n-3} < 0 \rightarrow \frac{2(n-\sqrt{2})(n+\sqrt{2})}{2n-3} < 0$



$\xrightarrow{n < -1} n < -\sqrt{2} \rightarrow (-\infty, -\sqrt{2})$