

$$\left. \begin{aligned} y_1^3 &= 2\alpha_1^3 - 1 \\ y_2^3 &= 2\alpha_2^3 - 1 \end{aligned} \right\} \alpha_1^3 = \alpha_2^3, \text{ تابع است } y_1^3 = y_2^3 \rightarrow y_1 = y_2$$

$$\Delta = y_2^3 - \varepsilon(y_1^3 + 1) = y_2^3 - \varepsilon y_1^3 - \varepsilon = -y_2^3 - \varepsilon^2$$

$$\frac{-y_2 \pm \sqrt{\Delta}}{2} = \frac{-y_2 \pm \sqrt{-y_2^3 - \varepsilon^2}}{2} \quad \Delta < 0$$

تابع است

$$\left. \begin{aligned} y_1^3 + y_2^3 &= 2\alpha_1^3 - 1 \\ y_1^3 + y_2^3 &= 2\alpha_2^3 - 1 \end{aligned} \right\} \alpha_1^3 = \alpha_2^3, \text{ تابع است } y_1^3 + y_2^3 = y_1^3 + y_2^3 \rightarrow y_1^3 - y_2^3 + y_1 - y_2 = 0$$

$$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2) + (y_1 - y_2) = 0 \quad y_1 y_2 = 0 \rightarrow y_1 = y_2$$

$$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 1) = 0 \quad y_1^2 + y_1 y_2 + y_2^2 + 1 = 0$$

$$y = \alpha^3 - 1$$

$$y = 3 \quad \alpha = 2 \quad 2^3 - 1 = 3$$

$$y = 3 \quad \alpha = -2 \quad (-2)^3 - 1 = 3$$

تابع است

$$y + \alpha^3 = 2\alpha - 1 \quad y = \sqrt[3]{2\alpha - \alpha^3 - 1}$$

$$y = 3 \quad \alpha = 2 \quad 2\sqrt[3]{2\alpha - \alpha^3 - 1} = 2$$

$$y = 3 \quad \alpha = -2 \quad 2\sqrt[3]{2\alpha - \alpha^3 - 1} = 2$$

تابع است

$$y + \alpha y = \alpha^3 + 1 \quad y(1 + \alpha) = \alpha^3 + 1 \quad y = \frac{\alpha^3 + 1}{\alpha + 1}$$

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

$$\alpha = 2 \quad ① \Rightarrow y = \frac{8}{3} \quad ② \Rightarrow y = 5$$

تابع نیست

$\frac{\sin}{\cos}$
 $\frac{\cos}{\sin}$

$$\tan \frac{\pi}{4} = \frac{\sqrt{3}}{1} = \sqrt{3}$$

$$\tan 30^\circ = \frac{-1}{\sqrt{3}} = -\frac{1}{\sqrt{3}}$$

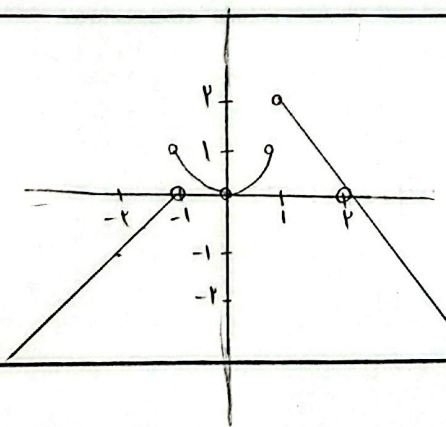
$$\cot \frac{\sqrt{3}}{9} = \frac{-\sqrt{3}}{1} = -\sqrt{3}$$

$$\cot 180^\circ = \frac{-1}{0}$$

تعریف نشده

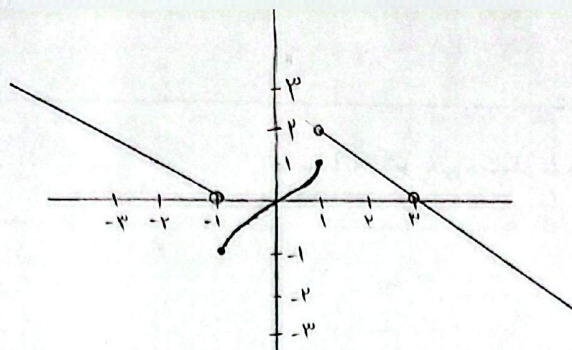
$$\sin \alpha = \frac{1}{4} \quad \alpha = \left\{ \frac{\pi}{6}, \frac{5\pi}{6} \right\}$$

$$\cos \alpha = \frac{\sqrt{3}}{4} \quad \alpha = \left\{ \frac{\pi}{6}, \frac{11\pi}{6} \right\}$$



$$\begin{aligned} -2\alpha + 4 & \quad \alpha > 1 \\ \alpha^2 & \quad -1 < \alpha < 1 \\ \alpha + 1 & \quad \alpha < -1 \end{aligned}$$

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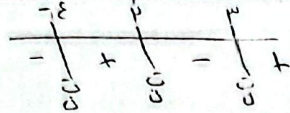


$$\begin{array}{ll} -n+3 & n > 1 \\ n^3 & -1 < n < 1 \\ -n-1 & n < -1 \end{array}$$

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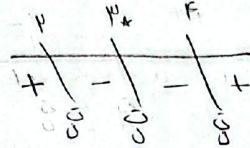
$$f = \frac{+}{-} \frac{+}{+} \frac{+}{-}$$

$$f = \left(\frac{n-1}{1} \right) \left(\frac{n-1}{1} \right) \left(\frac{n+1}{-1} \right)$$



$$R_f = (-1, 1) \cup (3, +\infty)$$

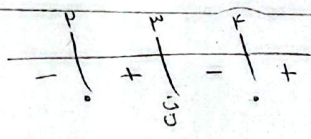
$$g = \left(\frac{n-1}{1} \right) \left(\frac{n-1}{1} \right) \left(\frac{n-1}{1} \right) \left(\frac{n-1}{+1} \right)$$



$$R_g = (-\infty, 1) \cup (5, +\infty)$$

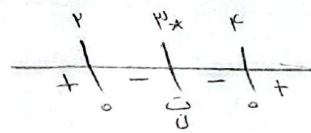
7

$$h = \frac{\left(\frac{1}{n-1} \right) \left(\frac{1}{n-1} \right)}{n-1}$$



$$R_h = (1, 3) \cup (5, +\infty)$$

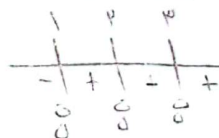
$$i = \frac{\left(\frac{1}{n-1} \right) \left(\frac{1}{n-1} \right)}{\left(\frac{n-1}{1} \right) \left(\frac{n-1}{1} \right)}$$



$$R_i = (-\infty, 1) \cup (5, +\infty)$$

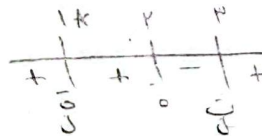
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$$j = \frac{n^3 - n^2 + n + 1}{n-1} = \frac{\left(\frac{1}{n-1} \right) \left(\frac{1}{n-1} \right)}{\frac{n-1}{1}}$$



$$R_j = (1, 3) \cup (5, +\infty)$$

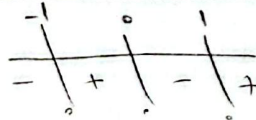
$$k = \frac{\left(\frac{1}{n-1} \right) \left(\frac{1}{n-1} \right)}{\left(\frac{n-1}{1} \right) \left(\frac{n-1}{1} \right)}$$



$$R_k = (-\infty, 1) \cup (3, +\infty)$$

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$$l = \frac{\frac{1}{n^2} (n^2 - 1)}{\frac{n^2 + n + 1}{n^2 + n + 1}} = \frac{\frac{1}{1} \frac{(n-1)(n+1)}{-1}}{1}$$



$$R_l = (-\infty, -1) \cup (1, +\infty)$$

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$$m = \frac{n^2 + n + 1}{n^2 + n + 1} = 1$$

$$R_m = \mathbb{R}$$