

1- باقی‌مانده ریاضی بررسی کنید

$$\begin{cases} y_1^3 = 2x_1^3 - 1 \\ y_2^3 = 2x_2^3 - 1 \end{cases} \xrightarrow{x_1^3 = x_2^3} y_1^3 = y_2^3 \rightarrow y_1 = y_2 \quad \checkmark$$

$$\begin{cases} y_1^3 + y_1 = 2x_1^3 - 1 \\ y_2^3 + y_2 = 2x_2^3 - 1 \end{cases} \xrightarrow{x_1^3 = x_2^3} y_1^3 + y_1 = y_2^3 + y_2 \quad \checkmark$$

$$y_1^3 - y_2^3 + y_1 - y_2 = 0$$

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

بمعنی

$$y_1 = y_2$$

$$y_1 = \frac{-y_2 \pm \sqrt{-3y_2^2 - 4}}{4}$$

2- با روش دلخواه

$$y = 2x^3 - 1 \quad y = 2 \quad x = \pm 1 \quad x \rightarrow \text{از این هر دو مقدار بگیرد و چک کن}$$

$$|y| + xy = 2x^3 + 1 \quad x=0 \quad y = \pm 1 \quad x$$

$$y^3 + x^3 = 2x^3 - 1 \rightarrow \begin{cases} y_1^3 = 2x_1^3 - 1 - x_1^3 \\ y_2^3 = 2x_2^3 - x_2^3 - 1 \end{cases} \rightarrow y_1 = y_2 \quad \checkmark$$

$$\sqrt[3]{y} + \sqrt[3]{x} = 2 \rightarrow \begin{cases} y = (2 - \sqrt[3]{x})^3 \\ y_2 = (2 - \sqrt[3]{x_2})^3 \end{cases} \xrightarrow{\sqrt[3]{x_1} = \sqrt[3]{x_2}} y_1 = y_2 \quad \checkmark$$

3- حاصل عبارت

$$\tan \frac{\pi}{4} \rightarrow \frac{\sin \frac{\pi}{4}}{\cos \frac{\pi}{4}} \rightarrow \frac{\frac{1}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = 1 \rightarrow \sqrt{3}$$

$$\cot \frac{\pi}{4} \rightarrow \frac{\cos \frac{\pi}{4}}{\sin \frac{\pi}{4}} \rightarrow \frac{\frac{1}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = 1 \rightarrow \sqrt{3}$$

$$\tan 330 \rightarrow \frac{\sin 330}{\cos 330} \rightarrow \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}}$$

$$\cot 110 \rightarrow \frac{\cos 110}{\sin 110} = -\frac{1}{0} \rightarrow \text{تقریباً}$$

4- هم‌مقداری است

$$\sin \alpha = \frac{1}{\sqrt{2}} \quad \left\{ 2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4} \right\} \cos \alpha = \frac{\sqrt{2}}{2}$$

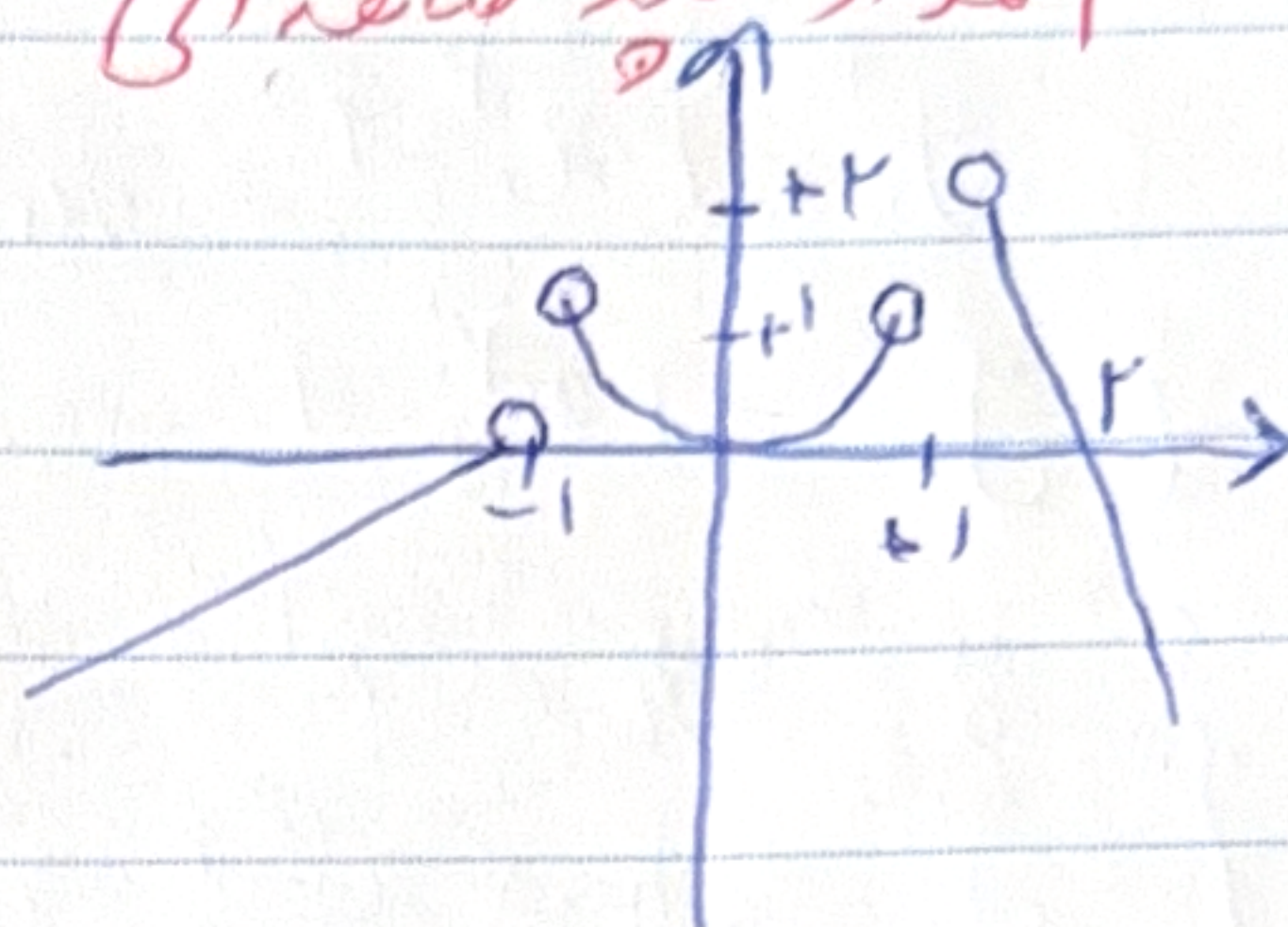
$$\alpha = \frac{\pi}{4}$$

$$\alpha_2 \left\{ 2k\pi + \frac{\pi}{4}, 2k\pi - \frac{\pi}{4} \right\}$$

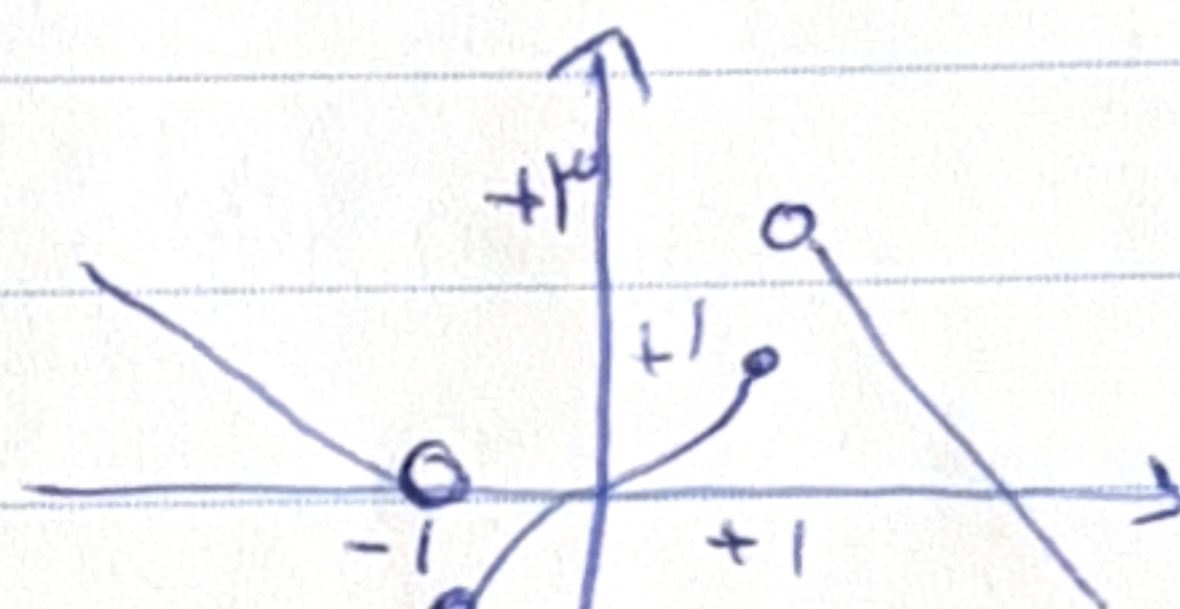


رسم نمودار چند ضلعی ای

$$f(x) = \begin{cases} -x+1 & x > 1 \\ x^2 & -1 < x < 1 \\ x+1 & x < -1 \end{cases}$$



$$f(x) = \begin{cases} -x+1 & x > 1 \\ x^2 & -1 < x < 1 \\ -x-1 & x < -1 \end{cases}$$



تعیین علامت

$$\begin{array}{ccc} \frac{+1}{(x-1)} & \frac{+1}{(x-1)} & \frac{+1}{(x-1)} \\ \frac{+1}{(x-1)} & \frac{+1}{(x-1)} & \frac{+1}{(x-1)} \end{array}$$

$$\begin{array}{ccc} +1 & +1 & +1 \\ - & + & - \\ + & + & + \end{array}$$

$$\frac{(x-1)(x-1)}{x-1}$$

$$\begin{array}{ccc} +1 & +1 & +1 \\ - & + & - \\ + & + & + \end{array}$$

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

$$\begin{array}{ccc} +1 & +1 & +1 \\ + & - & - \\ + & - & + \end{array}$$

$$\frac{x^2 - x + 1}{x-1} \xrightarrow{-1} -1$$

$$\begin{array}{ccc} -1 & 1 & +1 \\ - & + & - \\ + & - & + \end{array}$$

$$\frac{x^2 - x + 1}{x-1} \xrightarrow{+1} +1$$

$$\begin{array}{ccc} 1 & +1 & +1 \\ + & - & - \\ + & - & + \end{array}$$

$$\begin{array}{c} +1 \\ +1 \end{array}$$

DATE

/ /

Subject:

$$\frac{n^x - n^y}{n^x + n + y} \Rightarrow \frac{n^y (n^x - 1)}{n^x + n + y}$$

$\xrightarrow{0^*} \xrightarrow{-1}$

-1	0^*	+1
+	-	-
+	-	+

$$\frac{n^y + y n + x}{n^y + y n + y} \Rightarrow \frac{n^y + y n + x}{n^y + y n + y} \rightarrow \neq 0 \text{ or } \infty$$