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پارامترهای داده

$$\begin{aligned} \text{الف) } \left. \begin{aligned} y_1^2 &= 2x_1^2 - 1 \\ y_2^2 &= 2x_2^2 - 1 \end{aligned} \right\} \xrightarrow{x_1=x_2} y_1^2 &= y_2^2 \rightarrow y_1 = y_2 \\ \Delta &= 0 \text{ پس این رابطه برقرار نیست} \\ y_1 &= y_2 \end{aligned}$$

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

$$\begin{aligned} \text{ب) } \left. \begin{aligned} y_1^2 + y_2^2 &= 3x_1^2 - 1 \\ y_2^2 + y_1^2 &= 3x_2^2 - 1 \end{aligned} \right\} \xrightarrow{x_1=x_2} y_1^2 + y_2^2 &= y_2^2 + y_1^2 \\ y_1^2 - y_2^2 + y_1 - y_2 &= 0 \end{aligned}$$

$$\begin{cases} y_1 - y_2 = 0 \rightarrow y_1 = y_2 \\ y_1^2 + y_1 y_2 + y_2^2 + 1 = 0 \end{cases}$$

$$\text{الف) } \left. \begin{aligned} y_1 &= x_1^2 - 1 \\ y_2 &= x_2^2 - 1 \end{aligned} \right\} \xrightarrow{x_1=x_2} y_1 &= y_2 \checkmark$$

$$\text{ب) } |y_1 + y_2| = x_1^2 + 1 \xrightarrow{x=0} |y_1| = 1 \rightarrow \begin{cases} y_1 = -1 \\ y_1 = 1 \end{cases} \times$$

$$\text{ج) } \left. \begin{aligned} y_1^2 &= -x_1^2 + 2x_1 - 1 \\ y_2^2 &= -x_2^2 + 2x_2 - 1 \end{aligned} \right\} \xrightarrow{x_1=x_2} y_1^2 &= y_2^2 \checkmark$$

$$\text{د) } \left. \begin{aligned} \sqrt{y_1} &= -\sqrt{x_1} + 1 \\ \sqrt{y_2} &= -\sqrt{x_2} + 1 \end{aligned} \right\} \xrightarrow{x_1=x_2} \sqrt{y_1} &= \sqrt{y_2} \rightarrow y_1 = y_2 \checkmark$$

$$\text{الف) } \tan \frac{\pi}{3} \rightarrow \frac{\sin}{\cos} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$$

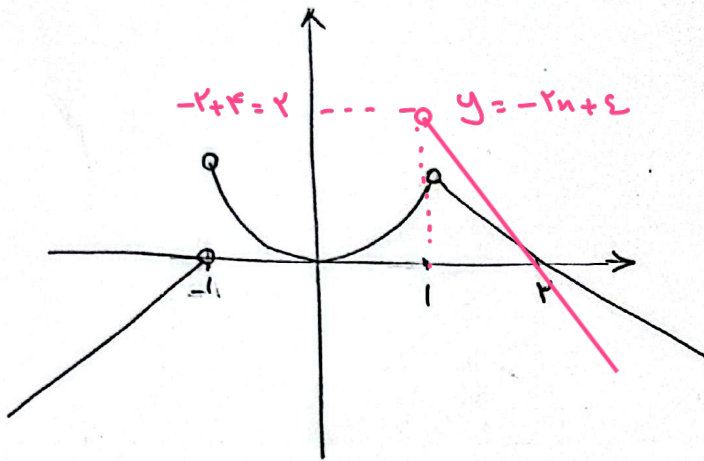
$$\text{ب) } \cot + \sqrt{\frac{\pi}{4}} \rightarrow \frac{\cos}{\sin} = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = -\sqrt{3}$$

$$\text{ج) } \tan 330^\circ \rightarrow \frac{\sin}{\cos} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}}$$

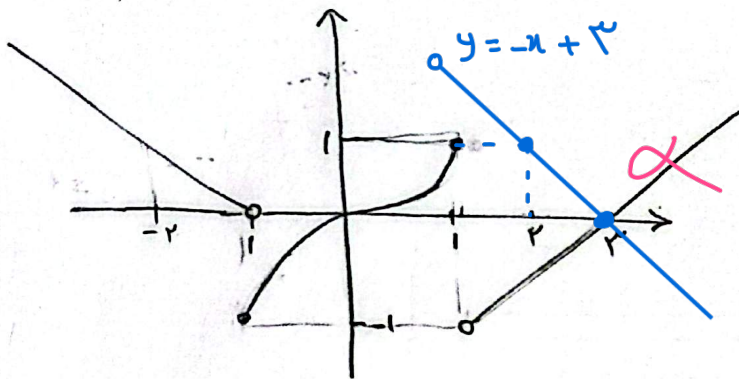
$$\text{د) } \cot + 180^\circ \rightarrow \frac{\cos}{\sin} = \frac{1}{0} \text{ بی‌معنی}$$

$$\text{الف) } \sin \alpha = \frac{1}{2} \quad \alpha = \frac{\pi}{6}, \frac{5\pi}{6}$$

$$\text{ب) } \cos \alpha = \frac{\sqrt{2}}{2} \quad \alpha = \frac{\pi}{4}, \frac{7\pi}{4}$$



(1, 2)



(1, 2)

شیب خط ۱ است!

الف) $y = (x-2)(x-3)(x-4)$

$(x-2)(x-3)(x-4) = 0 \Rightarrow \begin{cases} x=2 \\ x=3 \\ x=4 \end{cases}$

$\frac{2}{-} \frac{3}{+} \frac{4}{-}$

ب) $y = (x-2)(x-3)^2(x-4)$

$(x-2)(x-3)^2(x-4) = 0 \Rightarrow \begin{cases} x=2 \\ x=3 \\ x=4 \end{cases}$

$\frac{2}{+} \frac{3}{-} \frac{4}{+}$

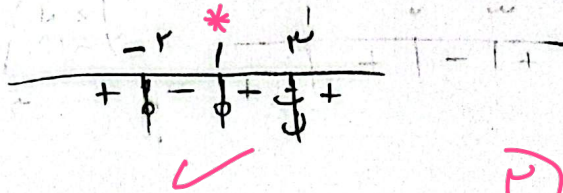
الف) $\frac{2}{-} \frac{3}{+} \frac{4}{-}$

ب) $\frac{2}{+} \frac{3}{-} \frac{4}{+}$

الف) $n^2 - 4n + 2 = 0$

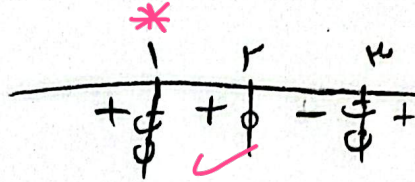
$\begin{cases} n=1 \\ n=5 \end{cases}$

$\begin{cases} n-2=0 \\ n=2 \end{cases}$



ب) $n^2 - 2n + 2 = 0$

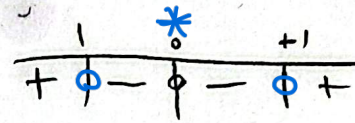
$\begin{cases} n=1 \\ n=2 \end{cases} \quad n^2 - 4n + 3 = 0$
 $\begin{cases} n=1 \\ n=3 \end{cases}$



الف) $n^2 + n + 2 = 0$

$\Delta = 1^2 - 4 \times 1 \times 2 = -7 < 0$ مخرج همیشه منفی

فقط اعداد کسری $n^2 - n^2$
 با اینکه عدد توان کمتر می شود



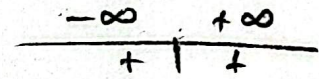
منتهای علامت همیشه منهای! بذار!

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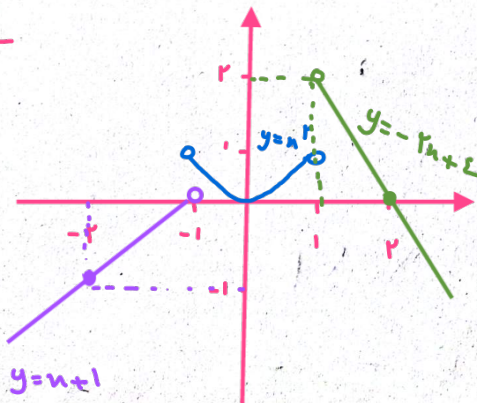
ب) $n^2 + 2n + 3 = 0$

$\Delta = 2^2 - 4 \times 1 \times 3 = -8 < 0$ مخرج همیشه منفی

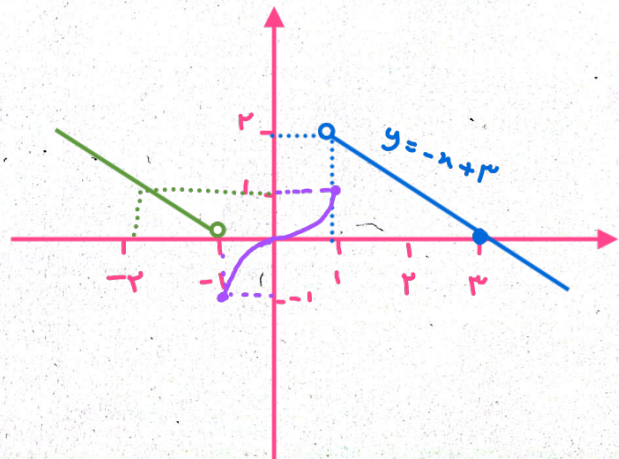
$n^2 + 2n + 3$
 $\Delta = 2^2 - 4 \times 1 \times 3 = -8 < 0$ مخرج همیشه منفی



۵-



۶-



الف - ۱۰ $y = \frac{n^2 - n^2}{n^2 + n + 2} = \frac{n^2(n^2 - 1)}{n^2 + n + 2} = \frac{n^2(n-1)(n+1)}{n^2 + n + 2}$

