

Subject :

Year . Month . Date . ()

سینا معینی

$$\text{الف) } y^3 = 2x^2 - 1 \rightarrow \begin{cases} y_1^3 = 2x_1^2 - 1 \\ y_2^3 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1 = y_2 \rightarrow y_1^3 - y_2^3 = 0$$

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

$$\Rightarrow y_1 = y_2 \quad \text{تابع}$$

$$\text{ب) } y^3 + y = 2x^2 - 1 \rightarrow \begin{cases} y_1^3 + y_1 = 2x_1^2 - 1 \\ y_2^3 + y_2 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 + y_1 = y_2^3 + y_2$$

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

$$\Rightarrow (y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 1) = 0 \Rightarrow y_1 = y_2 \quad \text{تابع}$$

$$\text{الف) } y = x^2 - 1 \quad \text{تابع}$$

$$\text{ب) } |y| + xy = x^2 + 1 \rightarrow |y| = x^2 - xy + 1$$

$$x = 0 \Rightarrow |y| = 1 \Rightarrow y = \pm 1 \quad \text{تابع}$$

$$\text{ج) } y^3 + x^3 = 2x - 1 \rightarrow y^3 = 2x - x^3 - 1 \quad \text{تابع}$$

$$\text{د) } \sqrt[3]{y} + \sqrt[3]{x} = 2 \rightarrow \sqrt[3]{y} = 2 - \sqrt[3]{x} \quad \text{تابع}$$

$$\tan = \frac{\sin}{\cos}, \cot = \frac{\cos}{\sin} \quad \text{تابع}$$

$$\text{الف) } \tan \frac{\pi}{4} \sim 45^\circ \quad \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{x\sqrt{3}}{x} = \sqrt{3}$$

$$\text{ب) } \cot \frac{\pi}{4} \sim 45^\circ \quad \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$$

$$\text{ج) } \tan 30^\circ \quad \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$$

$$\text{د) } \cot 110^\circ \rightarrow \frac{1}{0} \rightarrow \text{تعریف نشده}$$

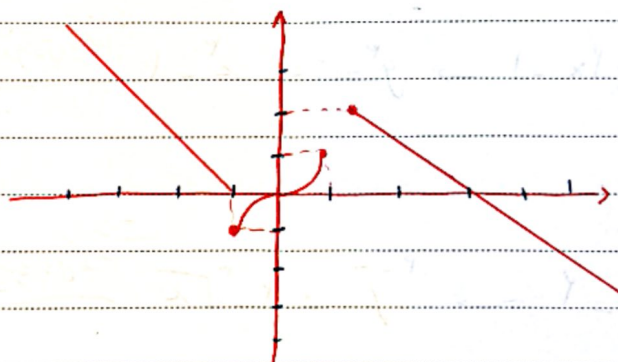
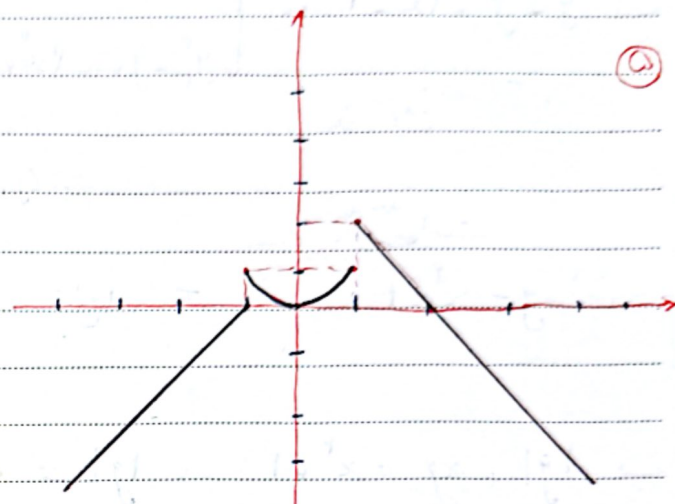
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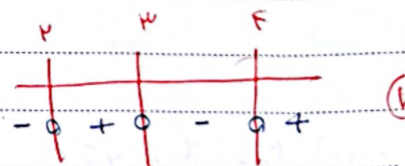
شيفافى

الف) $\sin \alpha = \frac{1}{\sqrt{2}} \rightarrow 45^\circ, 135^\circ \sim \frac{\pi}{4}, \frac{3\pi}{4}$ (ف)

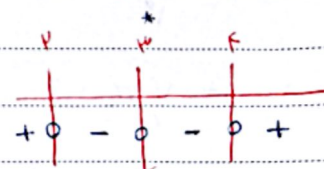
ب) $\cos \alpha = \frac{\sqrt{2}}{2} \rightarrow 45^\circ, 315^\circ \sim \frac{\pi}{4}, \frac{7\pi}{4}$



الف) $y = (x-2)(x-3)(x-4) =$



ب) $y = (x-2)(x-3)^2(x-4) =$

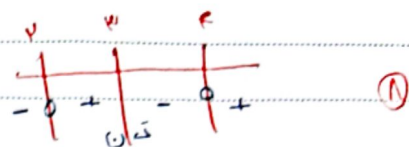


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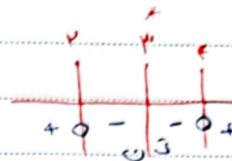
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Gives Line

$$\text{الف) } y = \frac{(x-2)(x-4)}{x-3}$$

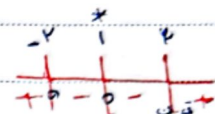


$$\text{ب) } y = \frac{(x-2)(x-4)}{(x-3)^2}$$

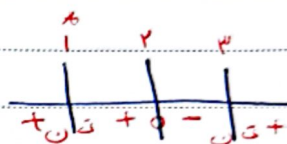


$$\text{الف) } y = \frac{x^3 - 3x + 2}{x-2}$$

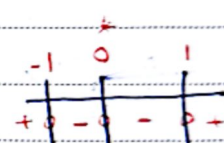
$$\begin{aligned} & \text{Divide } (x-2) \text{ into } (x^3 - 3x + 2) \\ & \rightarrow (x-1)(x^2 + x - 2) \\ & \rightarrow \frac{(x-1)^2(x+2)}{(x-2)} \end{aligned}$$



$$\text{ب) } y = \frac{x^2 - 3x + 2}{x^2 - 5x + 6} = \frac{(x-1)(x-2)}{(x-1)(x-3)}$$



$$\text{الف) } y = \frac{x^4 - x^2}{x^2 + x + 2} = x^2(x^2 - 1) \rightarrow x^2(x-1)(x+1)$$



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$$\text{ب) } \frac{x^2 + 3x + 2}{x^2 + 2x + 3}$$

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