

الف.)

$$\begin{aligned} y''' &= 2x^2 - 1 \\ y'' &= 2x - 1 \end{aligned} \quad \xrightarrow{x=0} \quad \begin{aligned} y''' &= y'' \\ y &= y' \end{aligned}$$

تابع است

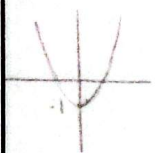
ب.)

$$\begin{aligned} y''' + y &= 2x^2 - 1 \\ y'' + y' &= 2x - 1 \end{aligned} \quad \xrightarrow{x=0} \quad \begin{aligned} y''' + y &= y'' + y' \\ y - y' + y - y' &= 0 \Rightarrow (y - y')(y + y' + y'') + (y - y') = 0 \\ (y - y')(y + y' + y' + 1) &= 0 \Rightarrow \Delta < 0 \end{aligned}$$

رابطه ی قوی نیست.

تابع است

الف.)



تابع است

ب.)

$$x=0$$

$$|y| = 1$$

$$y = \pm 1$$

تابع نیست

ج.)

$$\begin{aligned} y''' + x &= 2x - 1 \\ y'' + x' &= 2x' = 1 \end{aligned}$$

$$y''' = y''$$

$$y = y'$$

تابع است

د.)

$$\begin{aligned} \sqrt[3]{y} + \sqrt[3]{x} &= 2 \\ \sqrt[3]{y'} + \sqrt[3]{x'} &= 2 \end{aligned}$$

$$x = x'$$

$$\sqrt[3]{y'} = \sqrt[3]{2}$$

$$y' = y$$

تابع است

الف.)

$$\begin{aligned} \frac{\sin}{\cos} \frac{\pi}{3} &\Rightarrow \\ \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} &= \sqrt{3} \end{aligned}$$

ب.)

$$\begin{aligned} \frac{\cos}{\sin} \frac{\sqrt{3}\pi}{6} &\Rightarrow \\ \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} &= \sqrt{3} \end{aligned}$$

ج.)

$$\begin{aligned} \frac{\sin}{\cos} \frac{\pi}{3} &\Rightarrow \\ \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} &= -\frac{1}{\sqrt{3}} \\ &= -\frac{\sqrt{3}}{3} \end{aligned}$$

د.)

$$\frac{\cos}{\sin} \frac{\pi}{6} \Rightarrow \frac{-1}{0} \quad \text{تعریف نشده}$$

الف.)

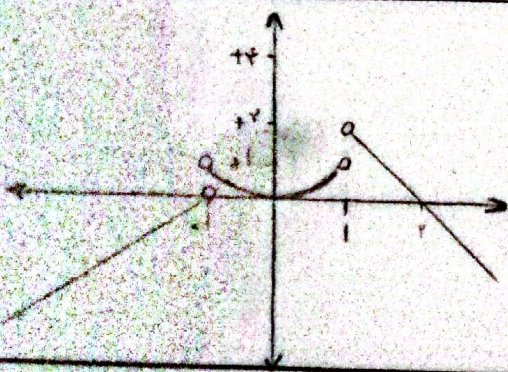
$$\sin \alpha = \frac{1}{\sqrt{3}}$$

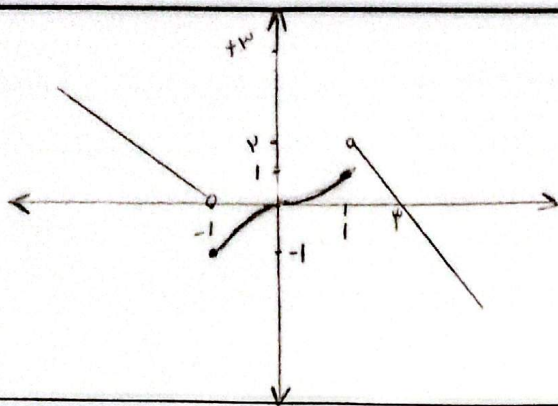
$$\alpha = \frac{\pi}{6} \text{ و } \frac{5\pi}{6}$$

ب.)

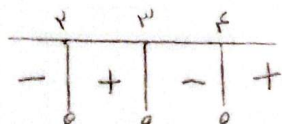
$$\cos \alpha = \frac{\sqrt{2}}{2}$$

$$\alpha = \frac{\pi}{4} \text{ و } \frac{7\pi}{4}$$

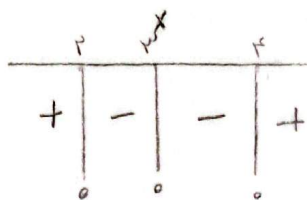




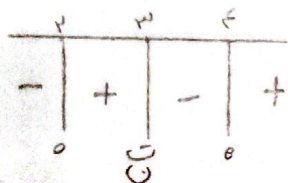
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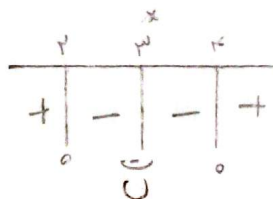
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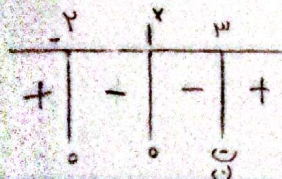


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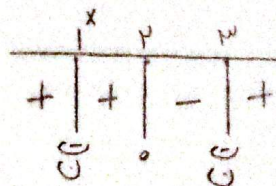
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$$\frac{(x+y)(x-1)^y}{x-y}$$



(پ)

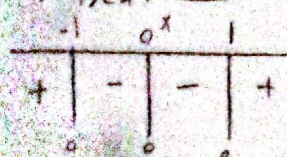
$$\frac{(x-4)(x-1)}{(x-4)(x-1)}$$



۱۱

$$x^2(x-1)(x+1)$$

$$x^y + x + y =$$



۲۰

$$2x^u + 12x + 1^s$$

$$x'' + px + q$$

۵۰ ریشه ندارد

حسن محمد نصرت