

۱۹ آفرین

الف)
$$\begin{cases} y_1^2 = 2x_1^2 - 1 \\ y_2^2 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^2 = y_2^2$$

$$y_1 = y_2$$

عبارت تابع است.

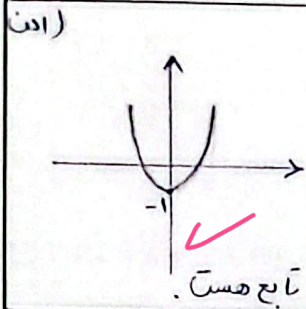
ب)
$$\begin{cases} y_1^2 + y_2 = 3x_1^2 - 1 \\ y_2^2 + y_2 = 3x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2}$$

$$y_1^2 + y_1 = y_2^2 + y_2 \rightarrow y_1^2 - y_2^2 + y_1 - y_2 = 0$$

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

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

برقرار نیست.
عبارت تابع است.



ب)
$$|y| + xy = x^2 + 1$$

$$x=0 \rightarrow |y| = 1$$

$$y = \pm 1$$

تابع نیست.

ج)
$$\begin{cases} y_1^2 = 2x_1 - 1 - x_1^2 \\ y_2^2 = 2x_2 - 1 - x_2^2 \end{cases} \xrightarrow{x_1 = x_2} y_1^2 = y_2^2$$

$$y_1 = y_2$$

تابع هست.

د)
$$\sqrt[3]{y} = 2 - \sqrt{x}$$

$$y = (2 - \sqrt{x})^3$$

تابع هست.
چرا؟ باید بدین از روش
های فست شده حل کنی!

الف)
$$\frac{\sqrt{3}}{2} \div \frac{1}{2} = \sqrt{3}$$

ب)
$$\frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \sqrt{3}$$

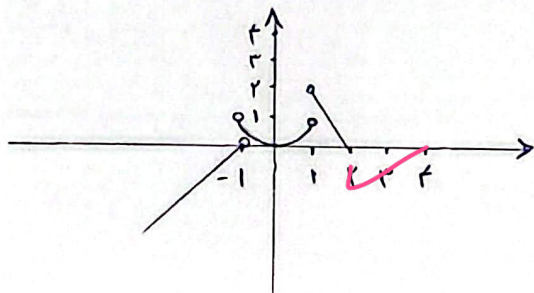
ج)
$$\frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$$

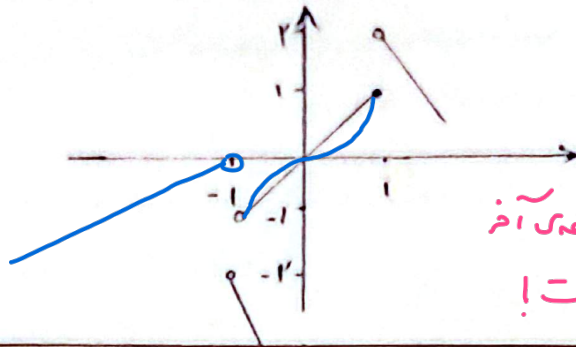
د)
$$-\frac{1}{0} \rightarrow \text{قبرین ریشه}$$

الف) $\sin \alpha = \frac{1}{4}$
$$D_f = \left\{ 2k\pi + \frac{\pi}{4} \right\} \cup \left\{ 2k\pi + \pi - \frac{\pi}{4} \right\}$$

ب) $\cos \alpha = \frac{\sqrt{2}}{2}$
$$D_f = \left\{ 2k\pi + \frac{\pi}{4} \right\} \cup \left\{ 2k\pi - \frac{\pi}{4} \right\}$$

$$D_f = \left\{ 2k\pi \pm \frac{\pi}{4} \right\}$$

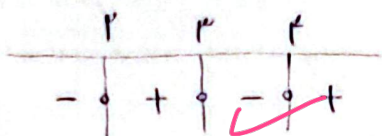




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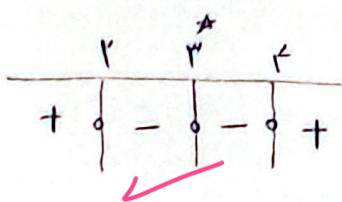
۶

الف) $n=2, n=3, n=2$



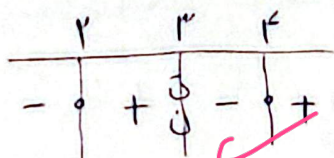
۵

ب) $n=2, n=3^*, n=2$



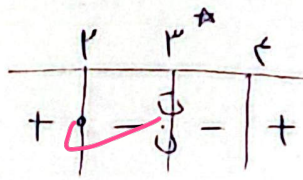
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الف) $n=2, n=2, n=3$



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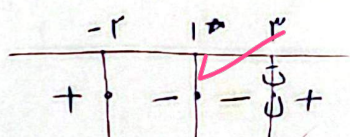
ب) $n=2, n=2, n=3^*$



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$$\frac{(n-1)(n+2)(n-1)}{n-3}$$

$$n=1^*, n=-2, n=3$$

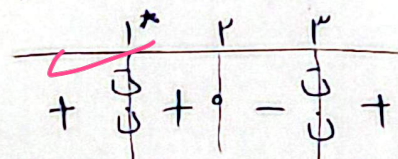


الف)

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$$\frac{(n-1)(n-2)}{(n-3)(n-1)}$$

$$n=1^*, n=2, n=3$$



ب)

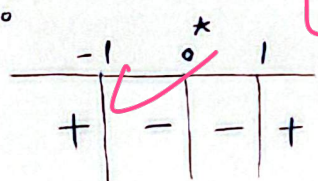
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$$\frac{n^2(n^2-1)}{n^2+n+2}$$

$$n^2+n+2$$

$$1-\Delta = -7 \Delta < 0$$

$$n^2(n^2-1) = 0$$



$$\frac{n^2+n+2}{n^2+n+2} = 1 \rightarrow \Delta = b^2 - 4ac$$

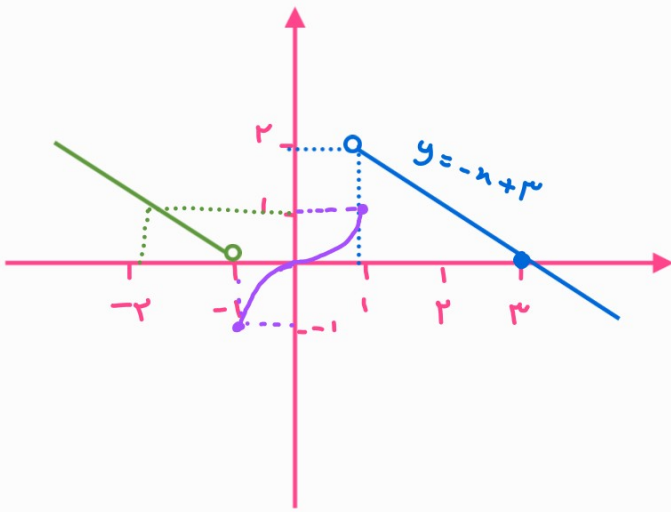
$$n^2+n+2 \rightarrow \Delta = b^2 - 4ac$$

نکته

$$\left. \begin{array}{l} 4-14 = -10 \Delta < 0 \\ 1-12 = -11 \Delta < 0 \end{array} \right\} \text{همیشه مثبت} \quad (+)$$

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۴-



۲- الف) رسم کنید



خط افتار صید با آن را قطع می کنند پس تا بویست ✓ $y = x^2 - 1$

۲- ج) $y^3 + x^3 = 2x - 1$ تعریف میانی

$$\begin{cases} y_1^3 + x_1^3 = 2x_1 - 1 \\ y_2^3 + x_2^3 = 2x_2 - 1 \end{cases} \quad \begin{matrix} \text{if } x_1 = x_2 \\ \text{then } y_1^3 = y_2^3 \end{matrix} \rightarrow y_1 = y_2 \quad \text{تا بویست ✓}$$

$$\sqrt[3]{x_1} = 2 - \sqrt[3]{y_1}$$

۲- د) $\sqrt[3]{y} + \sqrt[3]{x} = 2$ تعریف میانی

$$\begin{cases} \sqrt[3]{y_1} + \sqrt[3]{x_1} = 2 \\ \sqrt[3]{y_2} + \sqrt[3]{x_2} = 2 \end{cases} \quad \text{if } x_1 = x_2 \rightarrow 2 - \sqrt[3]{y_1} = 2 - \sqrt[3]{y_2} \rightarrow$$

$$\sqrt[3]{y_1} = \sqrt[3]{y_2} \rightarrow y_1 = y_2 \quad \text{تا بویست ✓}$$

$$\sqrt[3]{x_2} = 2 - \sqrt[3]{y_2}$$