

نام و نام خانوادگی: ... پاسخنامه تشریحی تکلیف شماره ... کلاس: ...

الف) $\begin{cases} y_1^3 = 2x_1^2 - 1 \\ y_2^3 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1=x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ تابع است

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ب) $\begin{cases} y_1^3 + y_1 = 2x_1^2 - 1 \\ y_2^3 + y_2 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1=x_2} y_1^3 + y_1 = y_2^3 + y_2 \Rightarrow (y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + y_1 + y_2 + 1) = 0$

$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + y_1 + y_2 + 1) = 0 \Rightarrow \begin{cases} y_1 - y_2 = 0 \Rightarrow y_1 = y_2 \\ y_1^2 + y_1 y_2 + y_2^2 + y_1 + y_2 + 1 = 0 \end{cases}$ تابع است.

الف) $y = x^2 - 1$

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ب) $x = 0 \Rightarrow |y| = 1 \Rightarrow y = \pm 1$ تابع نیست

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

د) $\sqrt{y} = 2 - \sqrt{x} \Rightarrow y = (2 - \sqrt{x})^2$ تابع است

الف) $\frac{\pi}{3} = 90^\circ \quad \tan = \frac{\sin}{\cos} \Rightarrow \tan \frac{\pi}{3} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

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ب) $\frac{\sqrt{3}\pi}{6} = 90^\circ \quad \cot = \frac{\cos}{\sin} \Rightarrow \cot \frac{\sqrt{3}\pi}{6} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$

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

د) $\cot = \frac{\cos}{\sin} \Rightarrow \cot 180^\circ = \frac{1}{0} \Rightarrow$ تعریف نشده

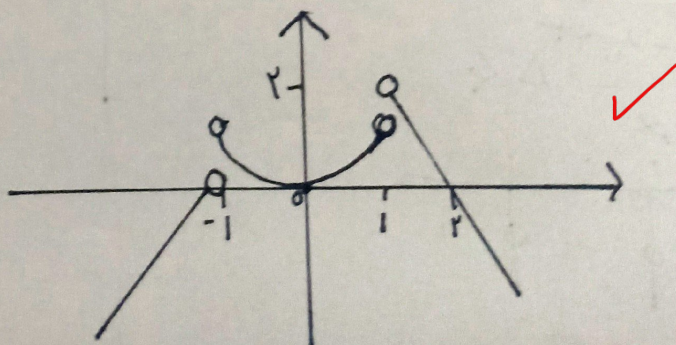
الف) $a = \frac{\pi}{9} \quad a = \omega \frac{\pi}{6}$

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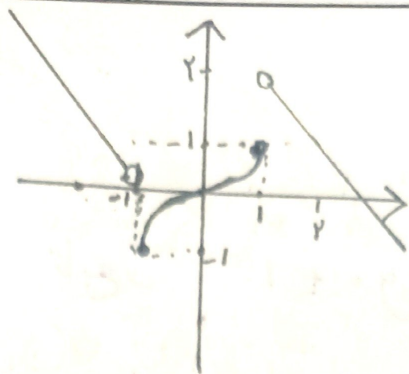
ب) $a = \frac{\pi}{4} \quad a = \frac{3\pi}{4}$

α می تواند $\frac{\pi}{4}$ یا $\frac{3\pi}{4}$ باشد

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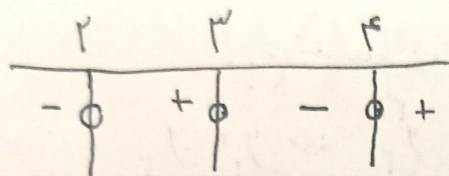
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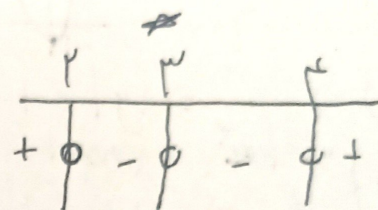
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الف ✓



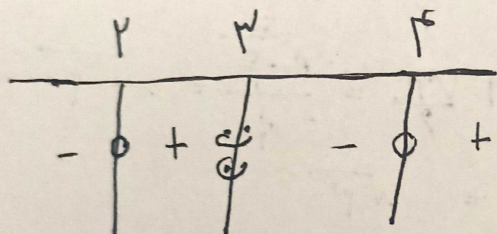
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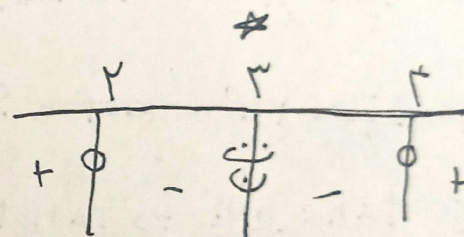
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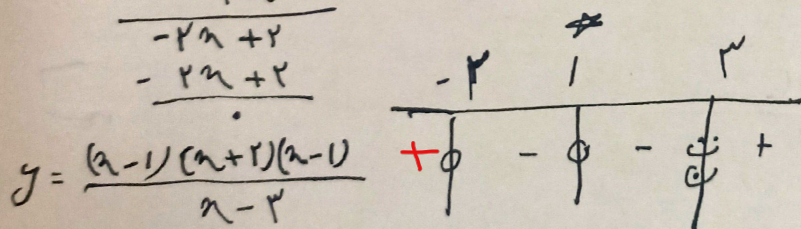
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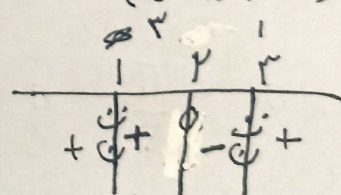
$$y = \frac{x^3 - 3x^2 + 2}{x^3 + x - 2}$$

$$\begin{array}{r} x^3 - 3x^2 + 2 \\ -x^3 + 2x^2 \\ \hline 2x^2 - 3x + 2 \\ -2x^2 + x \\ \hline -2x + 2 \\ -2x + 2 \\ \hline 0 \end{array}$$



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$$y = \frac{(x-1)(x-2)}{(x-2)(x-1)}$$



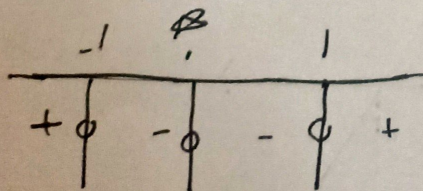
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الف ✓

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

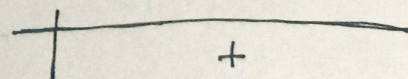
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$$y = \frac{x^2+3x+1}{x^2+x+1}$$

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$$\triangleright \sqrt[3]{y} + \sqrt[3]{x} = 2$$

$$\begin{aligned} \text{تقریب ریاضی} \rightarrow \begin{cases} \sqrt[3]{y_1} + \sqrt[3]{x_1} = 2 \\ \sqrt[3]{y_2} + \sqrt[3]{x_2} = 2 \end{cases} \xrightarrow{x_1 = x_2} \begin{cases} \sqrt[3]{y_1} + \sqrt[3]{x} = 2 \\ \sqrt[3]{y_2} + \sqrt[3]{x} = 2 \end{cases} \Rightarrow \sqrt[3]{y_1} = \sqrt[3]{y_2} \Rightarrow y_1 = y_2 \quad \text{تابع است.} \end{aligned}$$