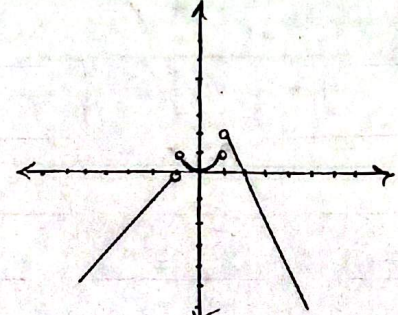
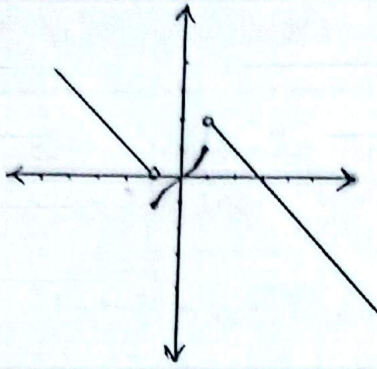


تابع است $\rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2$ $\begin{cases} y_1^3 = 2x_1^2 - 1 \\ y_2^3 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1=x_2} y_1^3 = y_2^3 \rightarrow y_1 = y_2$ الف) $y^3 = 2x^2 - 1$	
۱ $y^3 + y = 3x^2 - 1 \rightarrow \begin{cases} y_1^3 + y_1 = 3x_1^2 - 1 \\ y_2^3 + y_2 = 3x_2^2 - 1 \end{cases} \xrightarrow{x_1=x_2} y_1^3 + y_1 = y_2^3 + y_2 \rightarrow y_1^3 + y_1 - y_2^3 - y_2 = 0$ $(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2) + (y_1 - y_2) = 0 \rightarrow (y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 1) = 0$ $y_1^2 + y_1 y_2 + y_2^2 + 1 = 0 \rightarrow y_2 = -y_1 \pm \sqrt{y_1^2 - 4(y_1^2 + 1)}$ $y_2 = -y_1 \pm \sqrt{-3y_1^2 - 4}$ ب) $y^3 + y = 3x^2 - 1$ ج) $y^3 + x^3 = 2x - 1$ د) $\sqrt[3]{y} + \sqrt[3]{x} = \sqrt[3]{2x - 1}$	۱
۲ الف) $y = x^2 - 1$ ب) $y + xy = x^2 + 1$ ج) $y^3 + x^3 = 2x - 1$ د) $\sqrt[3]{y} + \sqrt[3]{x} = \sqrt[3]{2x - 1}$	۲
۳ الف) $\tan \frac{\pi}{4} = \frac{\sin \frac{\pi}{4}}{\cos \frac{\pi}{4}} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$ ب) $\cot \frac{3\pi}{4} = \frac{\cos \frac{3\pi}{4}}{\sin \frac{3\pi}{4}} = \frac{-\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = -1$ ج) $\tan \frac{5\pi}{6} = \frac{\sin \frac{5\pi}{6}}{\cos \frac{5\pi}{6}} = \frac{\frac{1}{2}}{-\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}}$ د) $\cot \frac{11\pi}{6} = \frac{\cos \frac{11\pi}{6}}{\sin \frac{11\pi}{6}} = \frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = -\sqrt{3}$	۳
۴ الف) $\sin \alpha = \frac{1}{4}$ ب) $\cos \alpha = \frac{\sqrt{15}}{4}$	۴
۵ 	۵



۶

الف) $y = (x-2)(x-3)(x-4)$

$$\begin{array}{c|cccc} x & 2 & 3 & 4 & \\ y & - & + & - & + \end{array}$$

ب) $y = (x-2)(x-3)(x-4)(x-5)$

$$\begin{array}{c|cccc} x & 2 & 3 & 4 & 5 \\ y & + & - & + & - \end{array}$$

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الف) $y = (x-2)(x-4) / (x-3)$

$$\begin{array}{c|cccc} x & 2 & 3 & 4 & \\ y & - & + & - & + \end{array}$$

ب) $y = (x-2)(x-4) / (x-3)^2$

$$\begin{array}{c|cccc} x & 2 & 3 & 4 & \\ y & + & - & + & - \end{array}$$

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الف) $y = x^2 - 3x + 2 / (x-3)$

$$\begin{array}{c|cccc} x & 2 & 3 & 4 & \\ y & - & + & - & + \end{array}$$

ب) $y = x^2 - 3x + 2 / (x^2 - 5x + 3)$

$$\begin{array}{c|cccc} x & 2 & 3 & 4 & \\ y & + & - & + & - \end{array}$$

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الف) $y = x^2 - x^2 / (x^2 + x + 2)$ $\rightarrow x^2(x^2 - 1) = x \cdot x \cdot (x^2 - 1)$

$$\begin{array}{c|cccc} x & 1 & 2 & -1 & +1 \\ y & + & - & + & - \end{array}$$

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ب) $y = x^2 + 3x + 4 / (x^2 + 2x + 3)$

عبارت‌ها را به صورت خطی است

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