

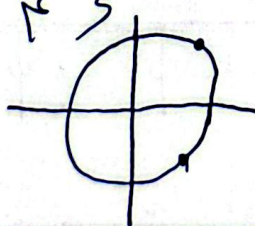
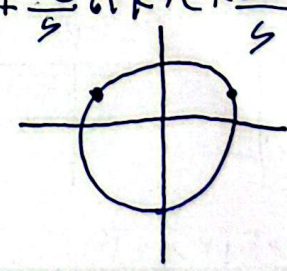
$\left. \begin{aligned} y_1^2 + y_2^2 &= 2x_1^2 - 1 \\ y_1^3 + y_2^3 &= 2x_2^2 - 1 \end{aligned} \right\} \Rightarrow \left. \begin{aligned} x_1 &= x_2 \\ y_1^2 + y_2^2 + 1 &= y_1^3 + y_2^3 + 1 \end{aligned} \right\} \Rightarrow y_1(y_1^2 + 1) = y_2(y_2^2 + 1)$ تابع است $\Rightarrow y_1 = y_2$	$\left. \begin{aligned} y_1^3 &= 2x_1^2 - 1 \\ y_2^3 &= 2x_2^2 - 1 \end{aligned} \right\} \Rightarrow \left. \begin{aligned} x_1 &= x_2 \\ y_1^3 + 1 &= y_2^3 + 1 \end{aligned} \right\} \Rightarrow y_1^3 = y_2^3$ تابع است $\Rightarrow y_1 = y_2$
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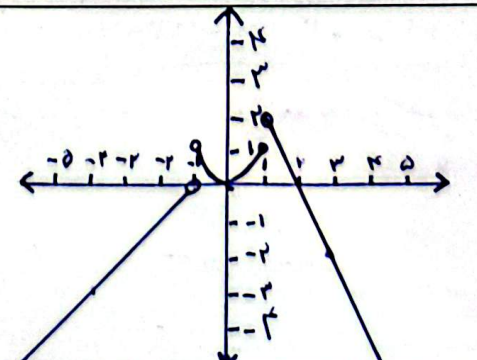
$ y_1 + x_1 y_2 = 2x_1^2 + 1 \quad \text{اگر } x_1 = 0 \Rightarrow y_1 + 0 = 0 + 1 \Rightarrow y_1 = \pm 1$ تابع نیست	$y = x^2 - 1$ الف: رسم شکل تابع است
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$\left. \begin{aligned} \sqrt[3]{y_1} + \sqrt[3]{x_1} &= 2 \\ \sqrt[3]{y_2} + \sqrt[3]{x_2} &= 2 \end{aligned} \right\} \Rightarrow \left. \begin{aligned} x_1 &= x_2 \\ \sqrt[3]{y_1} - 2 &= \sqrt[3]{y_2} - 2 \end{aligned} \right\} \Rightarrow \sqrt[3]{y_1} = \sqrt[3]{y_2} \Rightarrow y_1 = y_2$ تابع است	$\left. \begin{aligned} y_1^3 + x_1^3 &= 2x_1 - 1 \\ y_2^3 + x_2^3 &= 2x_2 - 1 \end{aligned} \right\} \Rightarrow \left. \begin{aligned} x_1 &= x_2 \\ y_1^3 + 1 &= y_2^3 + 1 \end{aligned} \right\} \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ تابع است
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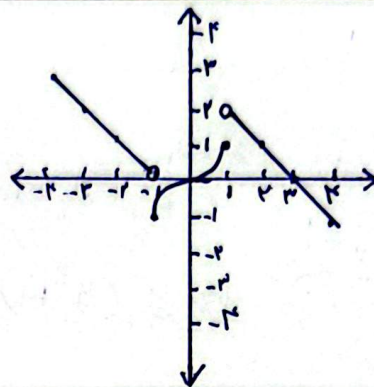
$\cot \frac{\sqrt{3}\pi}{9} = \cot 21.0^\circ = \frac{\cos 21.0^\circ}{\sin 21.0^\circ} = \frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = -\sqrt{3}$	$\tan \frac{\pi}{3} = \tan 60^\circ = \frac{\sin 60^\circ}{\cos 60^\circ} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$
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$\cot 18^\circ = \frac{\cos 18^\circ}{\sin 18^\circ} = \frac{1}{0}$ تعریف نشده	$\tan 33^\circ = \frac{\sin 33^\circ}{\cos 33^\circ} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}}$
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$\cos \alpha = \frac{\sqrt{2}}{2} \Rightarrow \alpha = \left\{ 2k\pi \pm \frac{\pi}{4} \right\}$ 	$\sin \alpha = \frac{1}{2} \Rightarrow \alpha = \left\{ 2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right\}$ 
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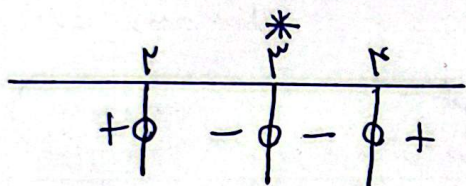
$f(x) = \begin{cases} x^2 + 1 & x > 1 \\ x^2 - 1 & x < 1 \\ x + 1 & x < -1 \end{cases}$	
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$$f(x) = \begin{cases} -x+3 & x > 1 \\ x^3 & -1 \leq x \leq 1 \\ -x-1 & x < -1 \end{cases}$$

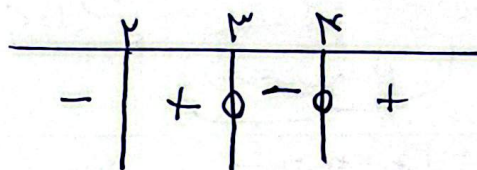


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$$y = (x-1)(x-2)^2(x-3) \quad \therefore$$

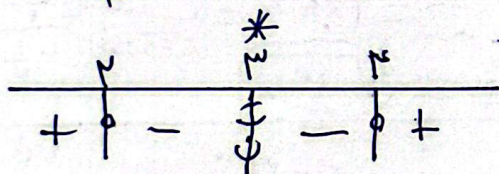


$$y = (x-1)(x-2)(x-3) \quad \text{الف}$$

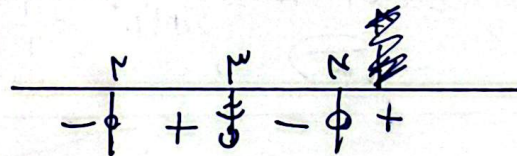


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$$y = \frac{(x-1)(x-2)}{(x-3)^2} \rightarrow \therefore$$

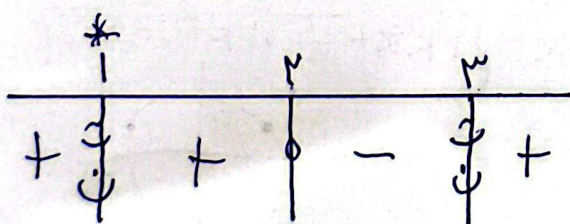


$$y = \frac{(x-1)(x-2)}{x-3} \rightarrow \text{الف}$$

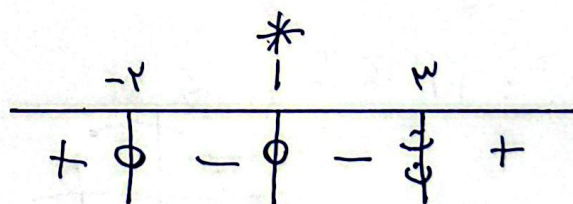


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$$y = \frac{x^2-3x+2}{x^2-x+1} = \frac{(x-1)(x-2)}{(x-1)(x-3)} \quad \therefore$$



$$y = \frac{x^2-3x+2}{x-3} = \frac{(x^2+x-2)(x-1)}{x-3} = \frac{(x+2)(x-1)}{x-3} \quad \text{الف}$$



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$$y = \frac{x^2+3x+2}{x^2+x+2} \rightarrow \Delta = 9 - (3 \times 2) = 9 - 6 = 3 > 0$$

$\Rightarrow$ (عبارتي متشابهتان)

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

$$\Delta = 1 - (1 \times 2) = -1 < 0 \Rightarrow$$



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