

الف) $y^3 = 2x^2 - 1$

ب) $y_1^3 + y_2^3 = 2x^2 - 1 \Rightarrow \begin{cases} y_1^3 + y_2^3 = 2x^2 - 1 \\ y_1^3 + y_2^3 = 2x^2 - 1 \end{cases}$

$\begin{cases} y_1^3 = 2x^2 - 1 \\ y_2^3 = 2x^2 - 1 \end{cases} \xRightarrow{x_1 = x_2} y_1 = y_2$

$\checkmark$ $y_1 = y_2$

$\Rightarrow y_1^3 + y_2^3 = y_1^3 + y_1^3 = 2y_1^3 = 2x^2 - 1$

$\Rightarrow y_1^3 = x^2 - \frac{1}{2} \Rightarrow y_1 = \sqrt[3]{x^2 - \frac{1}{2}}$

$\Rightarrow y_2 = \sqrt[3]{x^2 - \frac{1}{2}}$

$\Rightarrow y_1 = y_2$

الف) $y = x^2 - 1$ بازای هر مقدار x مقدار y منحصر به فرد است (تابع)

ب) $|y| + xy = x^2 + 1$

$x = 0 \Rightarrow |y| + (0)y = 0^2 + 1 \Rightarrow |y| = 1$

$|y| = 1 \Rightarrow y = 1$ خارج

۲) $y^2 + x^3 = 2x - 1$

$y^2 = 2x - x^3 - 1 \Rightarrow y = \pm \sqrt{2x - x^3 - 1}$ خارج

۳) $\sqrt[3]{y} + \sqrt{x} = 2$

$\sqrt[3]{y} = 2 - \sqrt{x} \Rightarrow y = (2 - \sqrt{x})^3$ خارج

$\Rightarrow x \geq 0$

الف) $\tan \frac{\pi}{3} = \frac{\sin \frac{\pi}{3}}{\cos \frac{\pi}{3}} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$

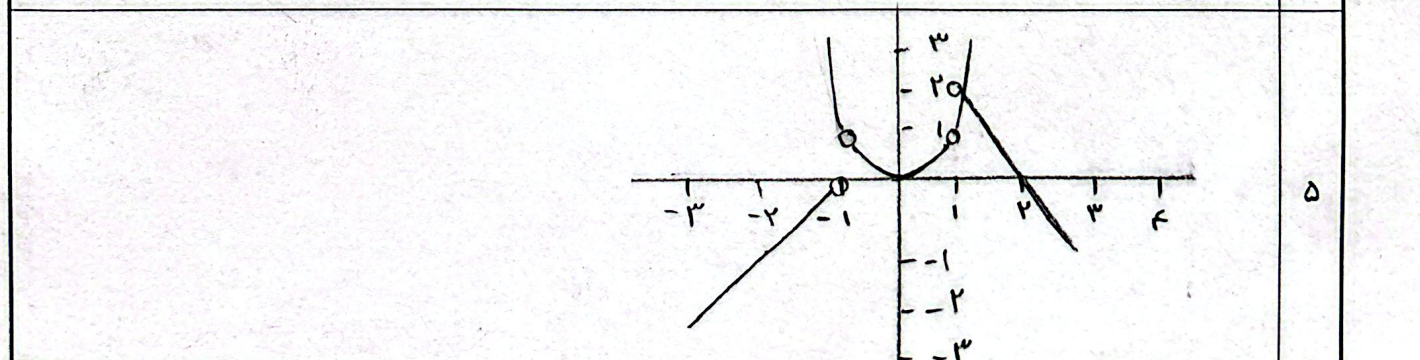
ب) $\cot \frac{\sqrt{3}\pi}{4} = \frac{\cos \frac{\sqrt{3}\pi}{4}}{\sin \frac{\sqrt{3}\pi}{4}} = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = -\sqrt{3}$

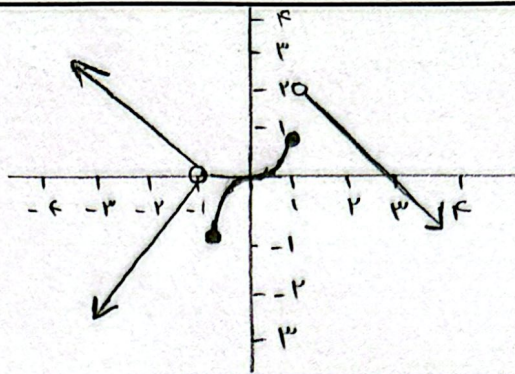
۲) $\tan 135^\circ = \frac{\sin 135^\circ}{\cos 135^\circ} = \frac{\frac{\sqrt{2}}{2}}{-\frac{\sqrt{2}}{2}} = -1$

۳) $\cot 110^\circ = \frac{\cos 110^\circ}{\sin 110^\circ} = \frac{-0.342}{0.939} = -0.364$ تعریف

الف) $\sin \alpha = \frac{1}{2} \Rightarrow \frac{\pi}{6}, \frac{5\pi}{6}$ $(0 \leq \alpha < 2\pi)$

ب) $\cos \alpha = \frac{\sqrt{2}}{2} \Rightarrow \frac{\pi}{4}, \frac{7\pi}{4}$





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الف) $y = (x-2)(x-3)(x-4)$

x	2	3	4
y	-	+	-
	+	-	+

ب) $y = (x-2)(x-3)^2(x-4)$

x	2	3*	4
y	+	-	-
	+	-	+

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الف) $y = \frac{(x-2)(x-4)}{x-3}$

x	2	3	4
y	-	+	-
	+	-	+

ب) $y = \frac{(x-2)(x-4)}{(x-3)^2}$

x	2	3*	4
y	+	-	-
	+	-	+

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

x	-2	1*	3
y	+	-	-
	+	-	+

ب) $y = \frac{x^3 - 3x + 2}{x^2 - 5x + 3} = \frac{(x-1)(x-2)}{(x-1)(x-3)}$

x	1*	2	3
y	+	+	-
	+	+	+

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الف) $y = \frac{x^4 - x^2}{x^2 + x + 2} = \frac{x^2(x-1)(x+1)}{x^2 + x + 2}$

x	-1	0*	1
y	+	-	-
	+	-	+

ب) $y = \frac{x^2 + 3x + 4}{x^2 + 2x + 3}$

الجزء الباقى
بالمقام
المقسوم عليه

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