

آزمون ۲

تابع $y = y_1 = y_2$ $\Rightarrow \sqrt[3]{2x^3-1} = \sqrt[3]{2x_1^3-1} \Rightarrow 2x^3-1 = 2x_1^3-1 \Rightarrow 2x^3 = 2x_1^3 \Rightarrow x^3 = x_1^3 \Rightarrow x = x_1$ (الف)

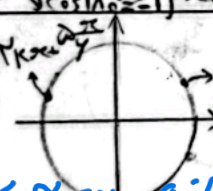
✓

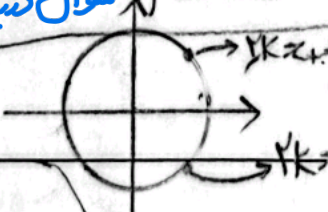
ب) $x^3 + y = 2x^2 - 1 \Rightarrow x^3 + y_1 = 2x_1^2 - 1 \Rightarrow (x_1^3 + y_1) - (x_2^3 + y_2) = 0 \Rightarrow (x_1^3 - x_2^3) + (y_1 - y_2) = 0$
 $(x_1 - x_2)(x_1^2 + x_1x_2 + x_2^2) + (y_1 - y_2) = 0$
 $(x_1 - x_2)(x_1^2 + x_1x_2 + x_2^2 + 1) = 0$
 $\Delta = (1)^2 - 4(1)(1) = -3 < 0$ (مستقر)

تابع $y = x^2 - 1$ (الف)  $y = \pm(x^2 - x + 1)$ تابع نیست ✓

ج) $y^3 + x = 2x - 1 \Rightarrow y^3 = -x + 2x - 1 \Rightarrow y = \sqrt[3]{-x + 2x - 1}$ تابع هست
 د) $\sqrt[3]{y} + \sqrt[3]{x} = 2 \Rightarrow \sqrt[3]{y} = 2 - \sqrt[3]{x} \Rightarrow y = (2 - \sqrt[3]{x})^3$ تابع هست

الف) $\tan(\frac{\pi}{3}) \Rightarrow \frac{\sin 60^\circ}{\cos 60^\circ} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$
 ب) $\cot(\frac{\sqrt{3}\pi}{6}) \Rightarrow \frac{\cos 60^\circ}{\sin 60^\circ} = \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}}$
 ج) $\tan(\frac{\pi}{3}) \Rightarrow \frac{\sin 60^\circ}{\cos 60^\circ} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$
 د) $\cot(180^\circ) \Rightarrow \frac{\cos 180^\circ}{\sin 180^\circ} = \frac{-1}{0}$ تعریف نشده ✓

$\sin \alpha = \frac{1}{2}$  $\{2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}\}$ ✓

سوال شماره ۲۲ به صورتی درج شده
 ب) $\cos \alpha = \frac{\sqrt{3}}{2}$  $\{2k\pi + \frac{\pi}{6}, 2k\pi - \frac{\pi}{6}\}$



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الف) $y = (x-1)(x-2)(x-4)$ $\therefore y = (x-1)(x-2)(x-4)$	٧
الف) $y = \frac{(x-1)(x-4)}{x-2}$ $\therefore y = \frac{(x-1)(x-4)}{(x-2)^2}$	٨
الف) $y = \frac{x^3 - 3x^2 + 2}{x-1}$ $\therefore y = \frac{x^3 - 3x^2 + 2}{x^2 - 6x + 3} = \frac{(x-1)(x-2)}{(x-1)(x-3)}$	١٠
الف) $\frac{x^2 - x^2}{x^2 + x + 1} \rightarrow x^2(x^2 - 1) = x^2(x+1)(x-1)$ $\Delta = b^2 - 4ac = 1 - 4 = -3$ $\therefore \frac{x^2 + x + 1}{x^2 + 2x + 1} \Delta = b^2 - 4ac = 4 - 4 = 0$	١٠