

الف) $y^3 = 2x^2 - 1 \Rightarrow \begin{cases} y_1 = 2x_1^2 - 1 \\ y_2 = 2x_2^2 - 1 \end{cases} \Rightarrow x_1 = x_2 \Rightarrow y_1 = y_2$ ✓ بج

ب) $y^3 + y = 2x^2 - 1$ $y_1^3 + y_1 = 2x_1^2 - 1$ $y_2^3 + y_2 = 2x_2^2 - 1$ $\Rightarrow x_1 = x_2 \Rightarrow y_1^3 + y_1 = y_2^3 + y_2$ $\Rightarrow y_1 = y_2$ ✓ بج
if $y_2 = 0 \Rightarrow y_1 = \{-1, 0\}$

ج) $y = (x-1)(x+1) \Rightarrow$ از هر دو یک و یکم به دست می آید

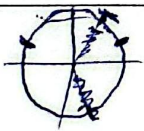
د) $|y| + xy = x^2 + 1 \Rightarrow x = 1 \Rightarrow |y| + y = 1 + 1 = 2 \Rightarrow y > 0 \Rightarrow y = 1$ ✓ بج
ه) $y^3 + x^3 = 2x - 1 \Rightarrow y = \sqrt[3]{-x^3 + 2x - 1}$ $\Rightarrow$ به ازای $x = 1$ $y = 0$ $\Rightarrow y \neq 0$ $\Rightarrow y = 1$ ✓ بج
و) $\sqrt{y} + \sqrt{x} = 2 \Rightarrow \sqrt{y} = 2 - \sqrt{x} \Rightarrow y = (2 - \sqrt{x})^2 \Rightarrow$ ✓ بج

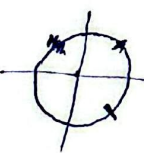
الف) $\tan \frac{\pi}{4} = \frac{\sin \frac{\pi}{4}}{\cos \frac{\pi}{4}} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$

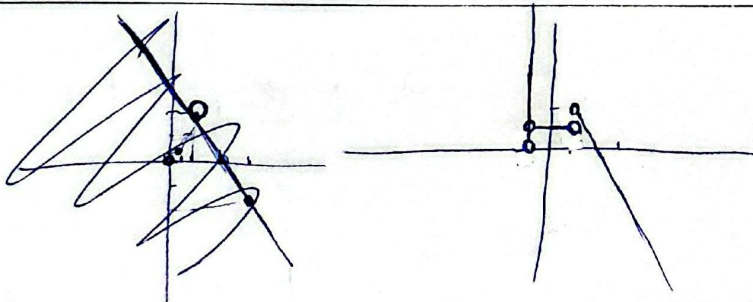
ب) $\cot \frac{\sqrt{\pi}}{4} = \frac{\cos \frac{\sqrt{\pi}}{4}}{\sin \frac{\sqrt{\pi}}{4}} = \frac{-\frac{1}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = -1$

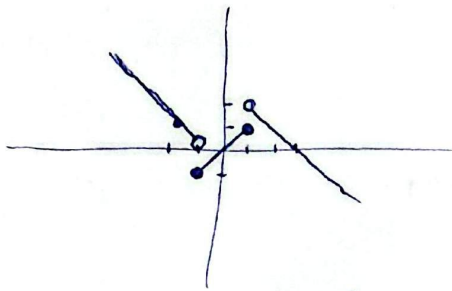
ج) $\tan 45^\circ = \frac{\sin 45^\circ}{\cos 45^\circ} = \frac{\frac{1}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = 1$

د) $\cot 110^\circ = \frac{\cos 110^\circ}{\sin 110^\circ} = \frac{-1}{0} \Rightarrow \infty$

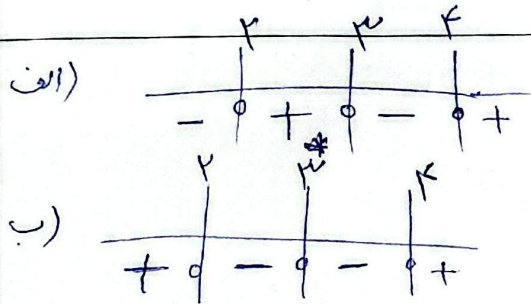
الف) $\sin \alpha = \frac{1}{\sqrt{2}}$  $\Rightarrow \alpha = \left\{ \frac{\pi}{4}, \frac{3\pi}{4} \right\}$

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

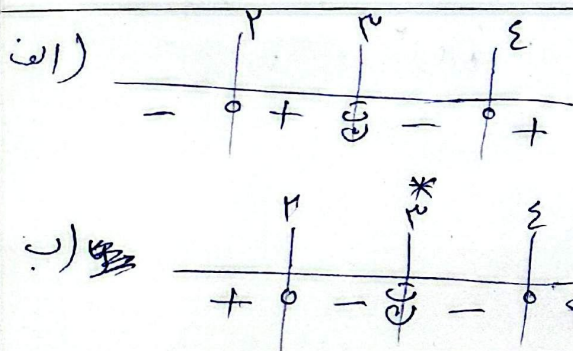




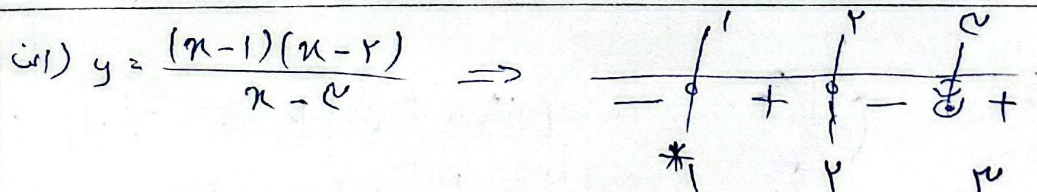
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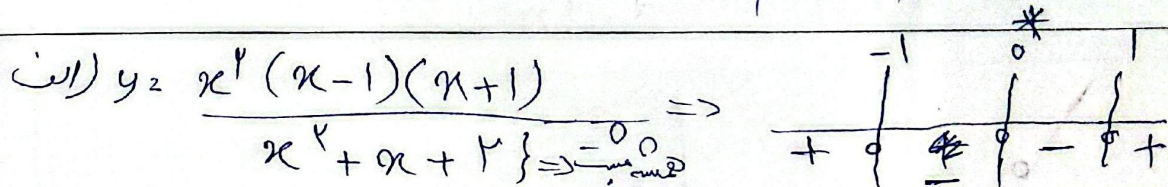
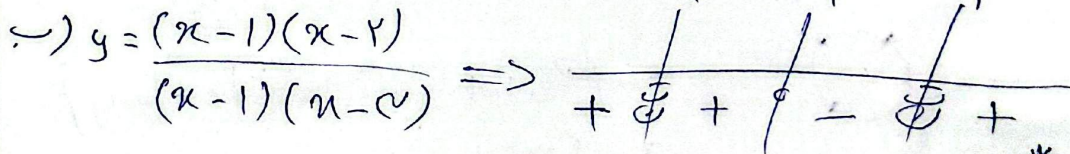
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