

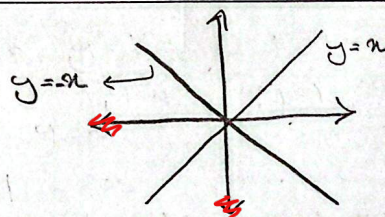
$$\begin{aligned} 4a &= a^2 + 3 \\ a^2 - 4a + 3 &= 0 \\ (a-1)(a-3) &= 0 \\ \boxed{a=1} \quad \boxed{a=3} \end{aligned}$$



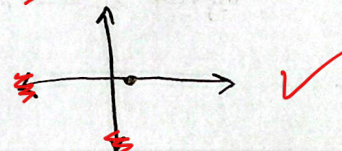
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تابع نیست $\rightarrow y = \pm |x| \rightarrow |y| = |x|$ الف



ب) $|x| + \sqrt{x-1} = 0 \rightarrow$ هر دو نامنفی $\rightarrow$ برای نقطه (۱, ۰) تابع $\rightarrow y=0 \quad x-1=0 \quad x=1$



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به ازای یک x دو $y \rightarrow y=0 \quad y=2 \rightarrow |y-1| = \sqrt{x-2} \xrightarrow{x=3} |y-1|=1$ الف

به ازای یک x سه $y \rightarrow y=0 \quad y=\pm 1 \rightarrow y^4 - y = \frac{x^2}{4} \xrightarrow{x=0} y(y^3 - 1) = 0$ ب

به ازای یک x چندین $y \rightarrow 1, 3, 5, 7, 9, \dots \rightarrow \cos^2 y = 1 \xrightarrow{x=0} \sin^2 x + \cos^2 y = 1$ ج

به ازای یک x چندین $y \rightarrow$ هر عددی $\rightarrow 2xy = x \xrightarrow{x=0} y$ د

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تابع نیست $\rightarrow y=4 \quad y=-2 \rightarrow x^2 + |y-1| = 4x \xrightarrow{x=1} |y-1|=3$ الف

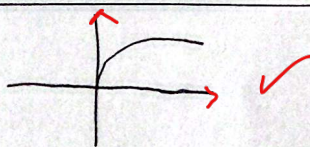
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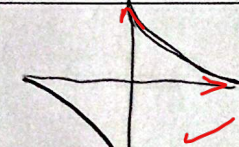
به ازای هر x فقط یک $y \rightarrow y = \sqrt{-3x} \quad y^5 = -3x \quad y^5 + 3x = 0$ ب

تابع است $\rightarrow y_1^5 = y_2^5 \rightarrow y_1 = \sqrt[5]{y_2^5} \rightarrow y_1 = y_2$ $\left\{ \begin{array}{l} y_1^5 + 3x_1 = 0 \\ y_2^5 + 3x_2 = 0 \end{array} \right. \xrightarrow{x_1=x_2} y_1^5 = y_2^5$

الف) $y = \sqrt[4]{x}$



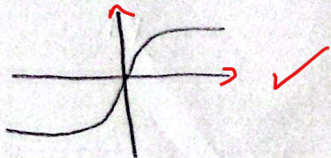
ج) $y = \frac{1}{x^3}$



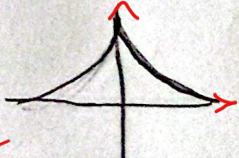
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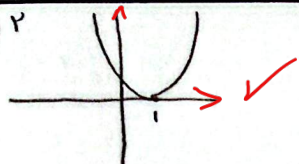
ب) $y = \sqrt[5]{x}$



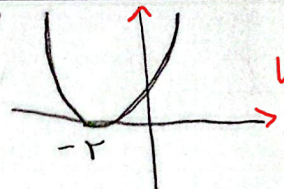
د) $y = \frac{1}{x^4}$



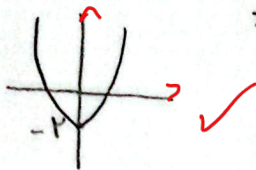
الف) $y = (x-1)^2$



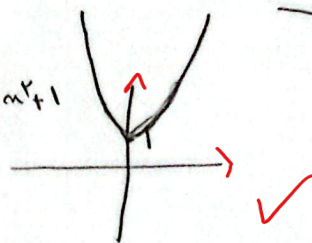
ب) $y = (x+2)^2$



ج) $y = x^2 - 2$

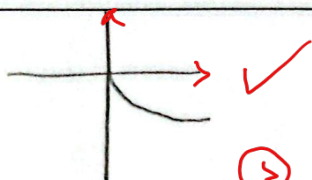


د) $y = x^2 + 1$

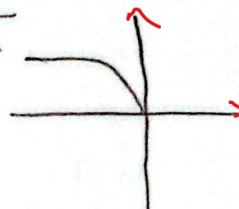


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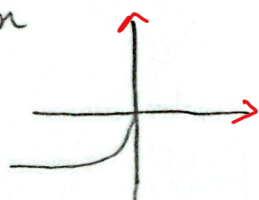
الف) $y = -\sqrt{x}$



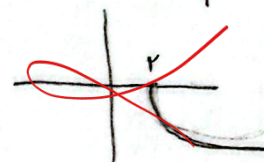
ب) $y = \sqrt{-x}$



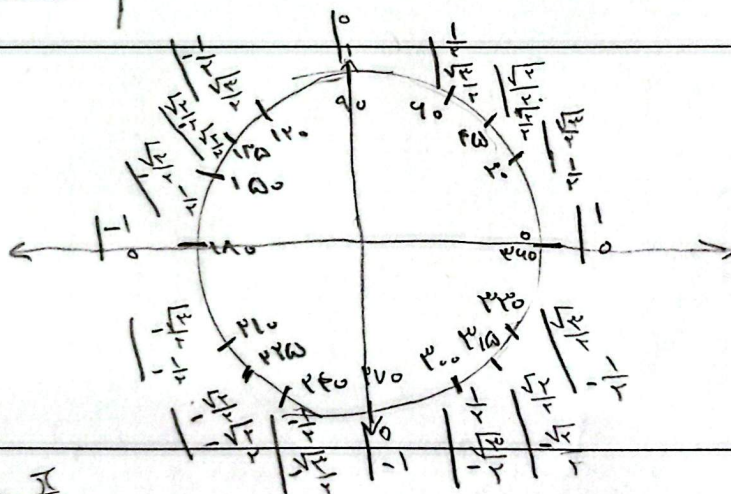
ج) $y = -\sqrt{-x}$



$y = -\sqrt{x} + 2$

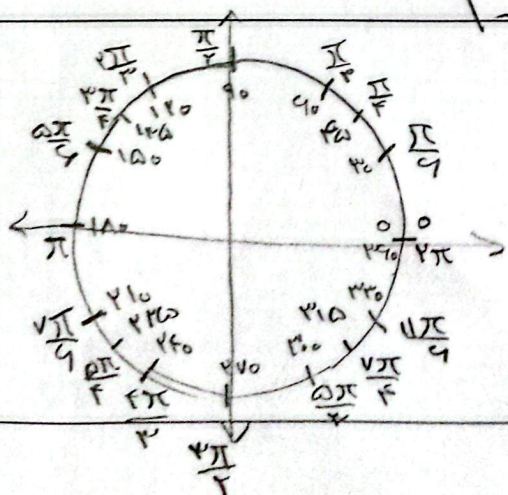


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الف) $\cos 120^\circ \rightarrow -\frac{1}{2}$

ج) $\sin 150^\circ \rightarrow \frac{1}{2}$

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ب) $\cos \frac{2\pi}{3} \rightarrow \cos 120^\circ \rightarrow -\frac{1}{2}$

د) $\sin \frac{11\pi}{6} \rightarrow \sin 330^\circ \rightarrow -\frac{1}{2}$