

$$f = \{(1, 4a), (1, a^2 + 3), (2, 2a)\} \rightarrow 4a = a^2 + 3 \Rightarrow a^2 - 4a + 3 = 0$$

$$\xrightarrow{\text{فاکتور}} (a-1)(a-3) = 0 \rightarrow \underline{a=1} \vee \underline{a=3}$$

الف) $|y| = x \rightarrow y = \pm x \rightarrow$ تابع نیست y دو مقدار دارد

ب) $|y| + \sqrt{x-1} = 0 \rightarrow |y| = -\sqrt{x-1}$
 $\rightarrow y = \pm \sqrt{x-1}$

الف) $|y-1| = \sqrt{x-2} \xrightarrow{x=3} |y-1| = 1 \rightarrow y-1 = \pm 1 \begin{cases} y=2 \\ y=0 \end{cases}$
 $\rightarrow (3, 2), (3, 0) \rightarrow$ تابع نیست

ب) $y^5 - y = \frac{x^2}{2} \xrightarrow{x=0} y^5 - y = 0 \rightarrow y(y^4 - 1) = 0 \begin{cases} y=0 \\ y=1 \\ y=-1 \end{cases}$ تابع نیست

ج) $\sin^2 x + \cos^2 \frac{y}{2} = 1 \xrightarrow{x=0} \cos^2 \frac{y}{2} = 1 \rightarrow \cos \frac{y}{2} = \pm 1 \begin{cases} y=0 \\ y=2\pi \end{cases}$ تابع نیست

د) $2xy = x \xrightarrow{x=0} 2(0)y = 0 \rightarrow$ هر مقداری برای y باشد تابع نیست

الف) $x^2 + |y-1| = 4x \rightarrow |y-1| = 4x - x^2 \rightarrow y-1 = \pm(4x - x^2)$
 $\rightarrow \underline{y = 1 + (4x - x^2)} \vee \underline{y = 1 - (4x - x^2)} \rightarrow$ دو تایی دارد پس تابع نیست

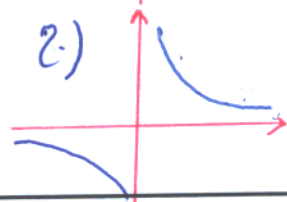
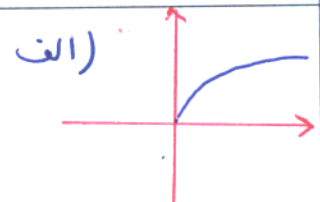
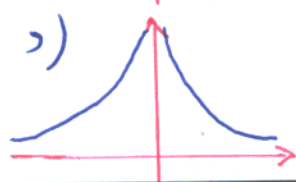
ب) $y^5 + 3x = 0 \rightarrow y^5 = -3x \rightarrow y = \sqrt[5]{-3x} \rightarrow$ برای هر عدد حقیقی یک جواب دارد

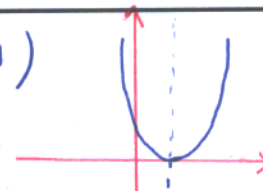
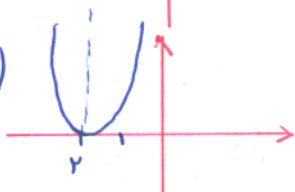
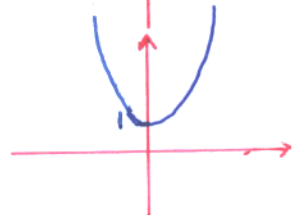
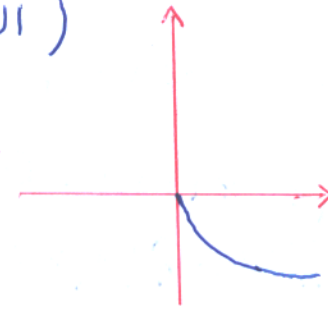
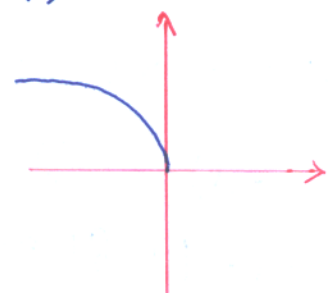
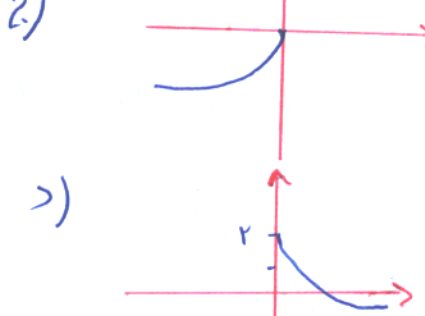
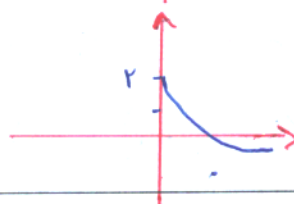
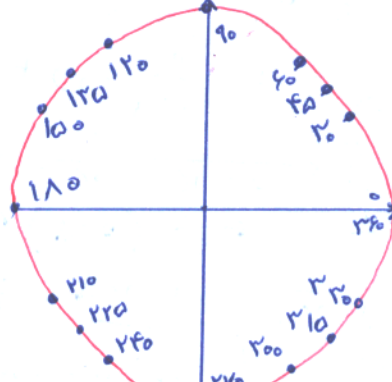
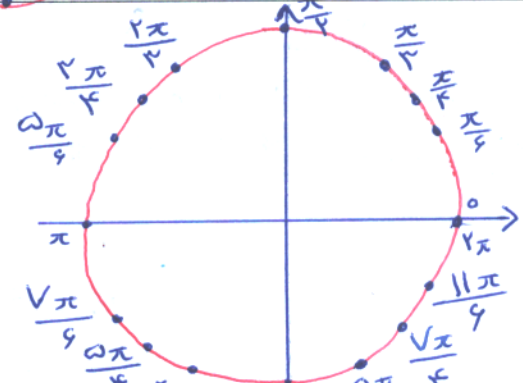
الف) $y = \sqrt[4]{x}$

ب) $y = \sqrt[5]{x}$

ج) $y = \frac{1}{x^3}$

د) $y = \frac{1}{x^4}$



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الف) $\cos 120^\circ = -\frac{1}{2}$ ب) $\sin 180^\circ = 0$ 2.) $\cos \frac{5\pi}{6} = -\frac{\sqrt{3}}{2}$ د) $\sin \frac{11\pi}{6} = -\frac{1}{2}$		١٠