

الف $P = \{(1, 4a), (1, a^2 + 3), (2, 4a)\}$

$4a = a^2 + 3 \Rightarrow a^2 - 4a + 3 = 0 = (a-1)(a-3) \Rightarrow \begin{cases} a=3 \\ a=1 \end{cases}$

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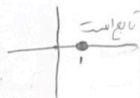
الف $|y| = |x| \Rightarrow x=1 \Rightarrow$



$\Rightarrow x=1 \Rightarrow \begin{cases} y=1 \\ y=-1 \end{cases} \rightarrow$ تابع نیست

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ب $|y| + \sqrt{x-1} = 0 \Rightarrow \begin{cases} y=0 \\ \sqrt{x-1}=0 \end{cases} \Rightarrow \begin{cases} y=0 \\ x=1 \end{cases} \Rightarrow (1,0)$



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الف $|y-1| = \sqrt{x-2} \rightarrow x=4 \Rightarrow |y-1|=2 \Rightarrow y-1=2 \vee y-1=-2 \Rightarrow y = \begin{cases} y=3 \\ y=-1 \end{cases} \rightarrow$ تابع نیست

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

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

د $\log y = x \Rightarrow x=0 \Rightarrow \begin{cases} y=1 \\ y=10 \end{cases} \Rightarrow$ تابع نیست

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الف $x^2 + |y-1| = 4x \Rightarrow x=1 \Rightarrow |y-1|=3 \Rightarrow y-1=3 \vee y-1=-3 \Rightarrow \begin{cases} y=4 \\ y=-2 \end{cases} \rightarrow$ تابع نیست

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ب $y^5 + 3x = 0 \Rightarrow x=0 \Rightarrow y^5=0 \Rightarrow y=0 \rightarrow$ تابع است

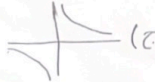
الف $y = \sqrt[4]{x}$



ب $y = \sqrt[5]{x}$



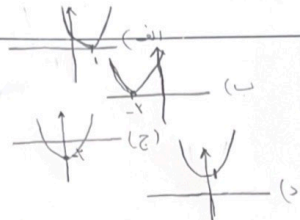
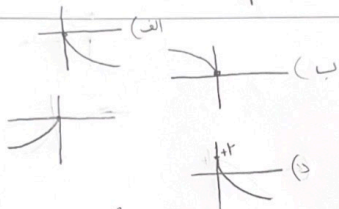
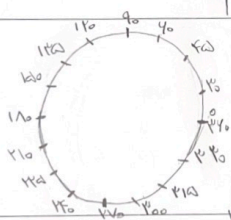
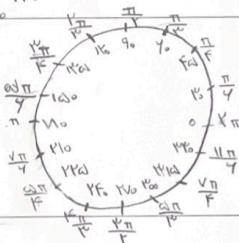
ج $y = \frac{1}{x^3}$



د $y = \frac{1}{x^2}$



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الف) $y = (x-1)^2 \Rightarrow$ ب) $y = (x+2)^2 \Rightarrow$ ج) $y = x^2 - 2 \Rightarrow$ د) $y = x^2 + 1 \Rightarrow$		٤
الف) $y = -\sqrt{x}$ ب) $y = \sqrt{x}$ ج) $y = -\sqrt{x}$ د) $y = \sqrt{x} + 2$		٧
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الف) $\cos 120^\circ = \frac{1}{2}$ ب) $\sin 150^\circ = \frac{1}{2}$ ج) $\cos \frac{5\pi}{3} = \frac{1}{2}$ د) $\sin \frac{11\pi}{4} = \frac{1}{2}$		١٠