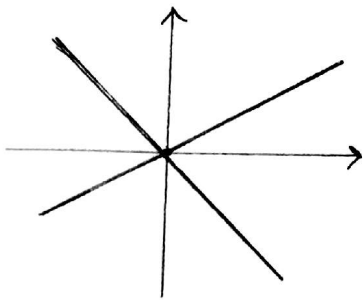


$$4a = a^2 + 3 \rightarrow a^2 - 4a + 3 = 0$$

$$(a-1)(a-3) = 0 \rightarrow \begin{cases} a=1 \\ a=3 \end{cases}$$

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الف)

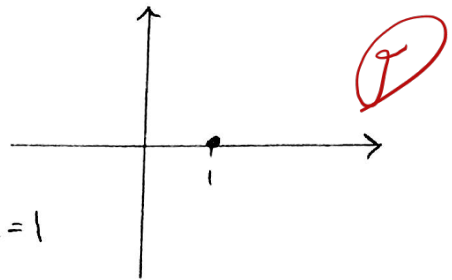


ب)

$$|y| = -\sqrt{x-1}$$

$$y = 0$$

$$x-1=0 \rightarrow x=1$$



الف) $x=3 \Rightarrow \sqrt{1} = |y-1| \rightarrow y-1 = \pm 1 \rightarrow \underline{y=0} \text{ و } \underline{y=2} \quad x$

ب) $x=0 \Rightarrow y^2 - y = 0 \rightarrow \underline{y=1} \text{ و } \underline{y=-1} \text{ و } \underline{y=0} \quad x$ ۵

ج) $x=0 \Rightarrow 0 + \cos^2 \frac{y}{2} = 1 \Rightarrow \cos \frac{y}{2} = \pm 1 \Rightarrow$ حداقل ۲ مقدار x برای y

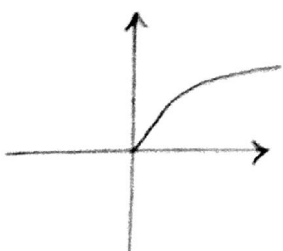
د) $x=0 \Rightarrow 0 \times y = 0 \Rightarrow$ هر مقداری می تواند باشد.

الف) $-x_2 + 4x_1 = |y-1| \rightarrow -x_2 + 4x_1 = y-1 \rightarrow y = -x_2 + 4x_1 + 1$
 تابع نیست.
 $\hookrightarrow -x_2 + 4x_1 = -y+1 \rightarrow y = x_2 - 4x_1 + 1$

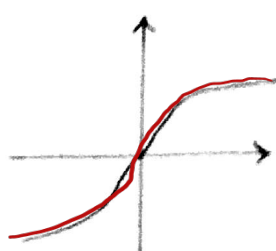
ب) $\begin{cases} y_1^2 + 3x_1 = 0 \\ y_2^2 + 3x_2 = 0 \end{cases}$

تابع هست.
 if $x_1 = x_2 \Rightarrow y_1^2 + 3x_1 = y_2^2 + 3x_2 \Rightarrow y_1^2 = y_2^2 \Rightarrow y_1 = y_2$

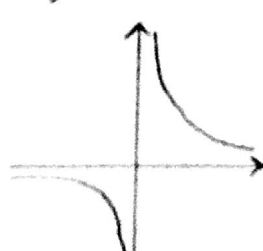
الف)



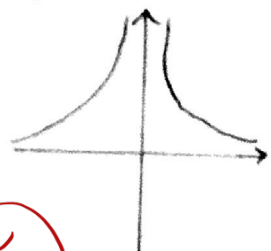
ب)



ج)

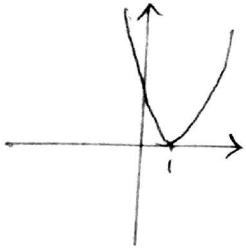


د)

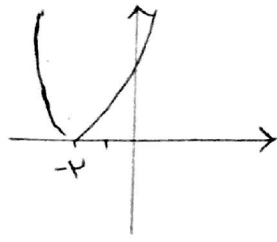


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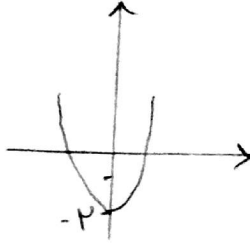
الف)



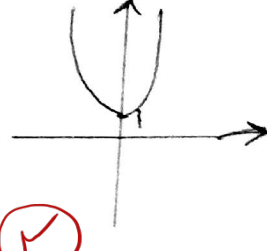
ب)



ج)

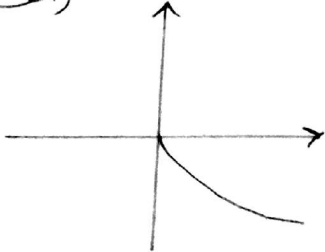


د)

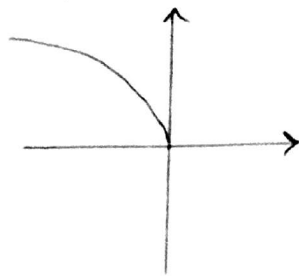


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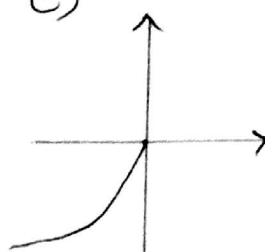
الف)



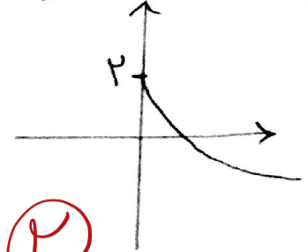
ب)



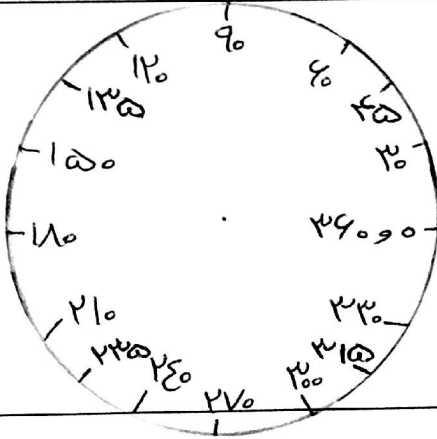
ج)



د)



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