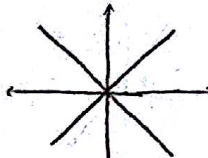
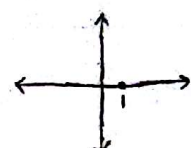


۱.

$$a^2 + 3 = 4a \rightarrow a^2 - 4a + 3 = 0 \rightarrow \text{مجموع ضرایب} = 0 \rightarrow a = 1, a = 3$$

۲.

تابع $y = \pm x$ (الف)  تابع نیست x

ب) $|y| = -\sqrt{x-1}$ $\rightarrow (1, 0)$  تابع است ✓ فقط در صورتی ممکن است که هر دو طرف صاف باشد

۳.

الف) $x = 3 \rightarrow |y-1| = 1 \rightarrow y < 0$

ب) $x = 0 \rightarrow y^5 - y = 0 \rightarrow y(y^4 - 1) = 0 \rightarrow y < 1$

ج) $x = 0 \xrightarrow{-1/1} \cos^2 \frac{y}{r} = 1 \rightarrow \frac{y}{r} < \pi \rightarrow y < 2\pi$

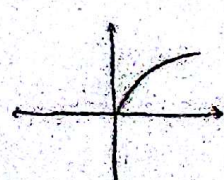
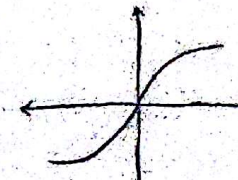
د) $x = 0 \rightarrow y \rightarrow \text{بیشتر عددی توان باز}$

۴.

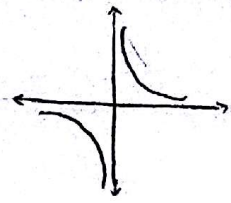
الف) $x = 1 \rightarrow |y-1| = 4-1=3 \rightarrow y < -2$ تابع نیست x

ب) $\left. \begin{array}{l} \text{if } (x_1, y_1) \in f \\ \text{if } (x_2, y_2) \in f \end{array} \right\} \begin{array}{l} x_1 = x_2 \\ y_1 = y_2 \end{array} \rightarrow \begin{array}{l} y_1^5 + 3x_1 = 0 \\ y_2^5 + 3x_2 = 0 \end{array} \rightarrow y_1^5 = y_2^5 \rightarrow y_1 = y_2 \checkmark$ تابع هست ✓

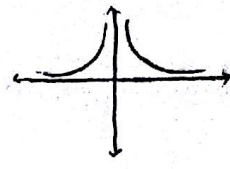
۵.

الف)  ب) 

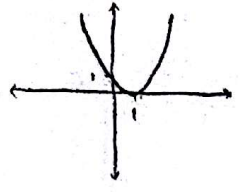
ج)



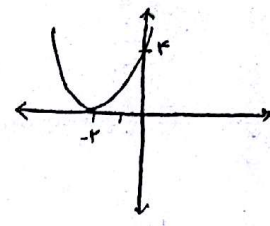
د)



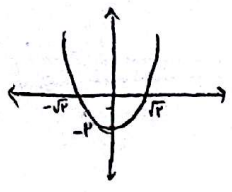
الف)



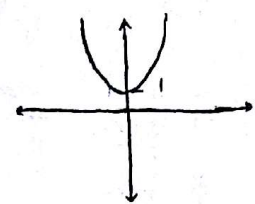
ب)



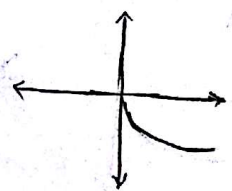
ج)



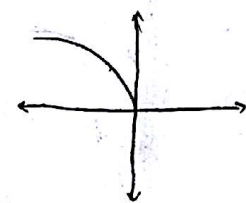
د)



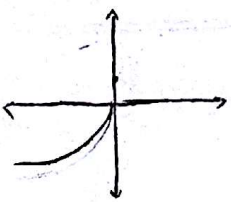
الف)



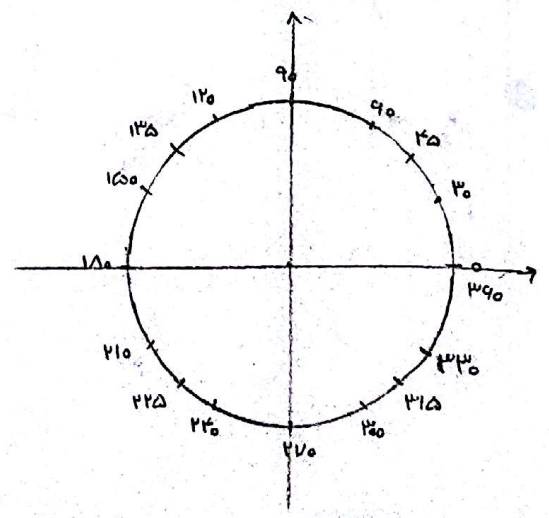
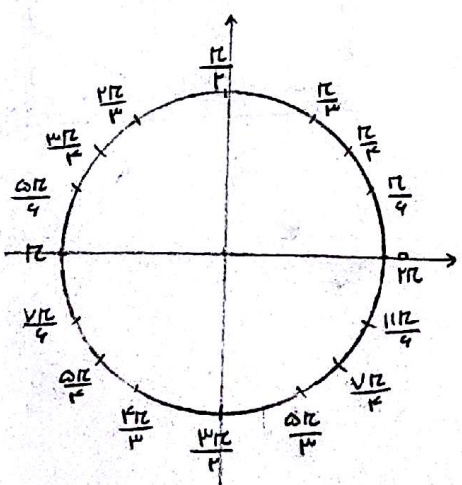
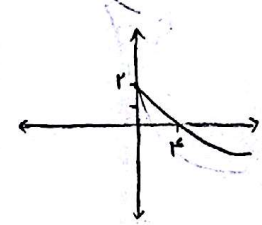
ب)



ج)



د)



الف) $-\frac{1}{p}$

ب) $\frac{1}{p}$

ج) $\frac{1}{p}$

د) $-\frac{1}{p}$