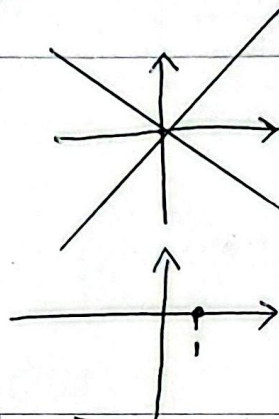


$$a^2 + 3 = 4a \Rightarrow a^2 - 4a + 3 = 0 \Rightarrow (a-3)(a-1) = 0 \begin{cases} a=3 \\ a=1 \end{cases}$$

$$a=3 \rightarrow f = \{(1, 12), (2, 9)\} \checkmark$$

$$a=1 \rightarrow f = \{(1, 4), (2, 3)\} \checkmark$$

الف) x تابع نیست $\kappa = \pm y$



ب) $\checkmark$ تابع است

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

ب) x $\kappa = 0 \rightarrow y^4 - y = 0 \rightarrow y(y^3 - 1) = 0 \rightarrow \begin{cases} y=0 \\ y=1 \\ y=-1 \end{cases}$

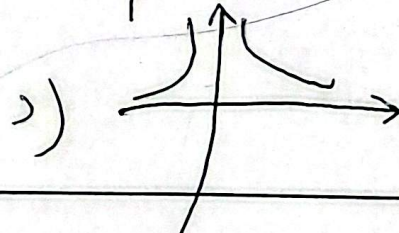
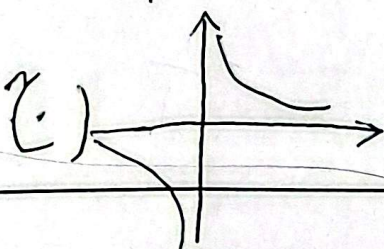
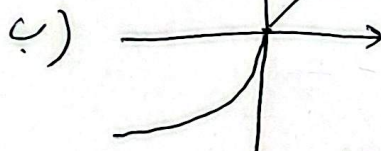
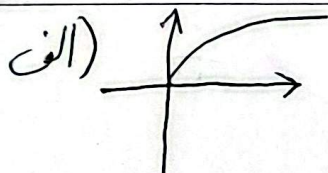
ج) x $\kappa = 0 \rightarrow \cos^2 \frac{y}{2} = 1 \rightarrow \cos \frac{y}{2} = \pm 1 \rightarrow \begin{cases} \cos \frac{y}{2} = \cos 0 \\ \cos \frac{y}{2} = \cos \pi \end{cases}$

د) x $\kappa = 0 \rightarrow$ بی شمار جواب دارد پس تابع نیست

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

ب) اثبات $y_1^4 + 3\kappa_1 = y_2^4 + 3\kappa_2 \rightarrow y_1^4 - y_2^4 = 3(\kappa_2 - \kappa_1)$

اگر $\kappa_1 = \kappa_2$ باشد $y_1^4 - y_2^4 = 0 \rightarrow y_1 = y_2$



الف) ج)	ب) د)	٦
الف) ج)	ب) د)	٧
		٨
		٩
الف) $\cos 120^\circ = -\frac{1}{2}$ ج) $\cos \frac{6}{3}\pi = \frac{1}{2}$	ب) $\sin 120^\circ = \frac{1}{2}$ د) $\sin \frac{11}{9}\pi = -\frac{1}{2}$	١٠