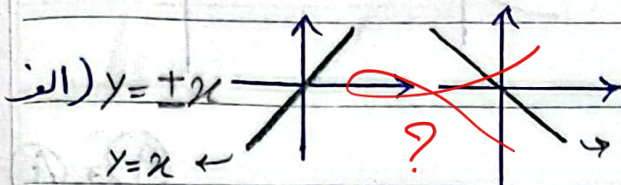
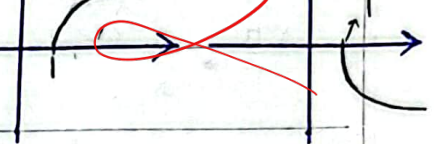


$$fa = a^2 + 3 \rightarrow a^2 + 3 - 4a = 0 \rightarrow (a-1)(a-3) = 0 \rightarrow \begin{cases} a=1 \\ a=3 \end{cases} \quad \text{✓ (۲) ۱}$$



ب) $y = \pm \sqrt{x-1}$
 $y = \sqrt{x-1}$
 $y = -\sqrt{x-1}$



ج) $|y| = -\sqrt{x-1} \rightarrow y = \pm \sqrt{x-1}$
 $y = 3 \rightarrow |y-1| = 2 \rightarrow y-1 = \pm 2 \rightarrow \begin{cases} y=3 \\ y=-1 \end{cases} \rightarrow \text{X ج. ۲}$

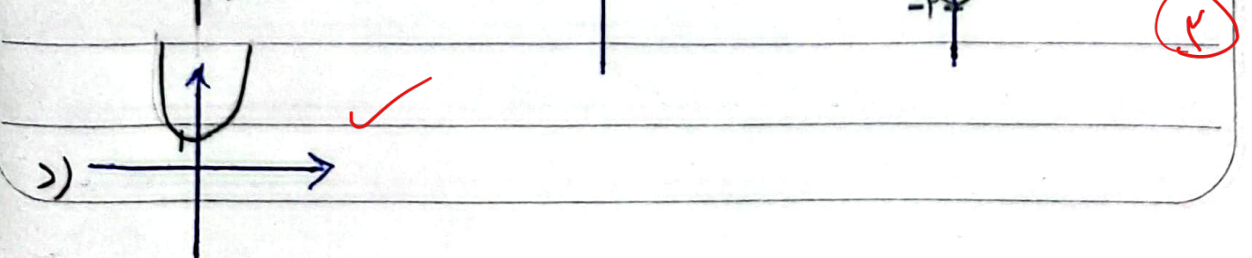
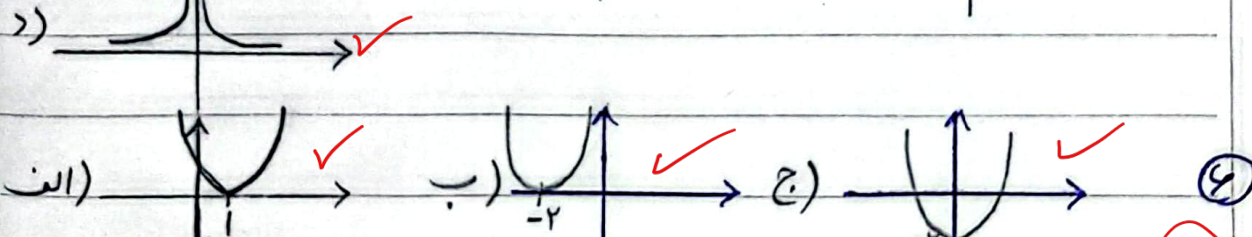
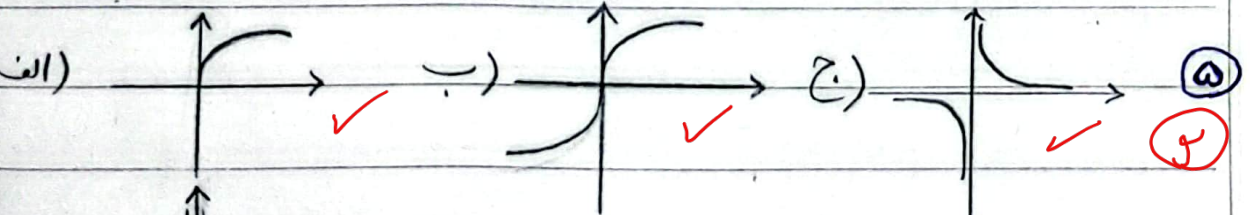
د) $y(y^2-1) = y(y^2+1)(y^2-1) = y(y^2+1)(y-1)(y+1) = 0$
 $y=0 \rightarrow y=\pm 1$

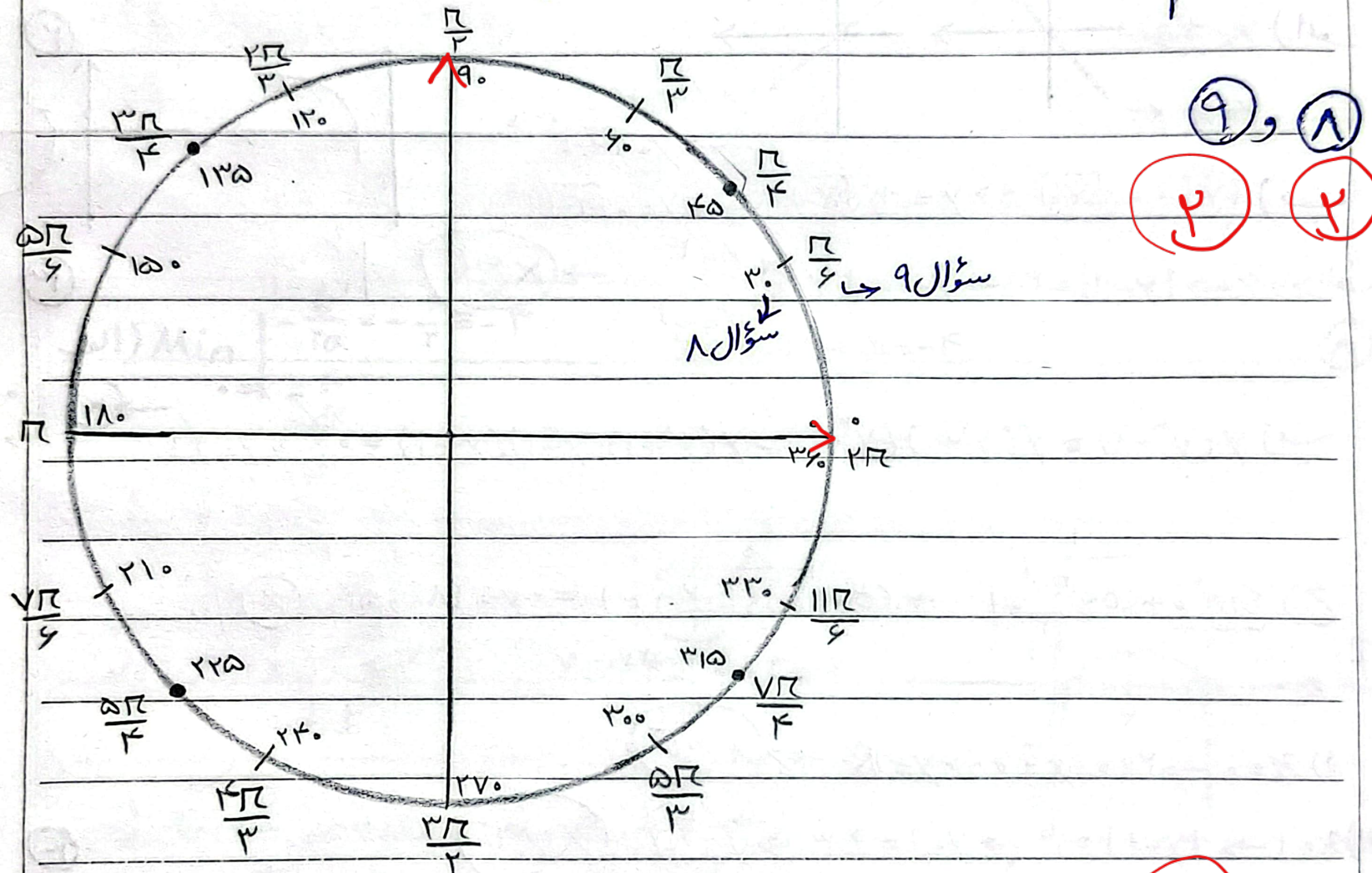
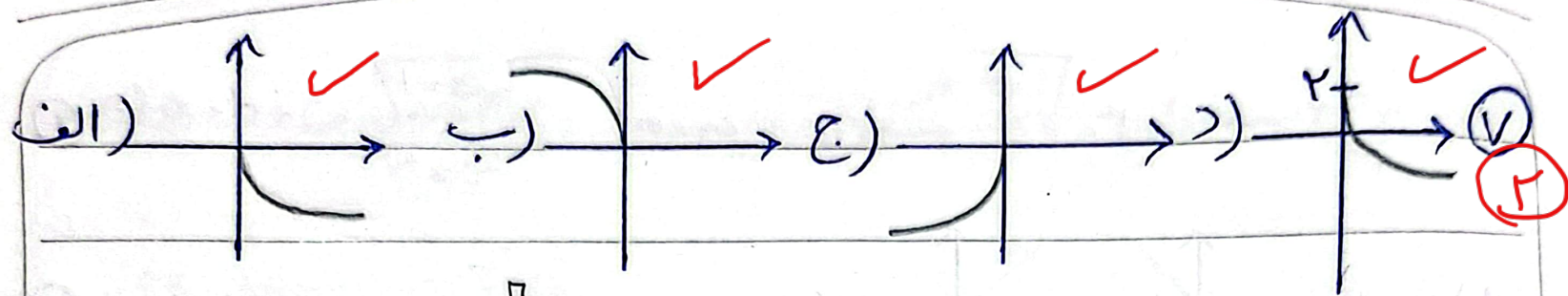
ه) $\sin^2 y + \cos^2 y = 1 \rightarrow \cos(\cos(\frac{y}{2})) = 1 \Rightarrow y = 180^\circ \text{ و } 540^\circ$
 $90^\circ \text{ و } 270^\circ$

و) $2x = 0 \rightarrow 2x \cdot xy = 0 \rightarrow y = \mathbb{R} \Rightarrow \text{X ج. ۲}$

ز) $|x-1| = 3 \rightarrow x-1 = \pm 3 \rightarrow \begin{cases} x=4 \\ x=-2 \end{cases} \rightarrow \text{X ج. ۲}$

ح) $y_1^2 + 3x_1 = 0$
 $y_1^2 + 3x_1 = 0 \rightarrow y_1^2 + 3x_1 = y_2^2 + 3x_2 \rightarrow y_1^2 = y_2^2 \rightarrow y_1 = y_2$

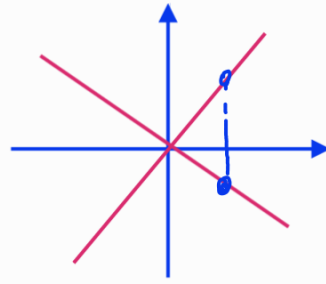




الف) $-\frac{1}{2}$ ج) $\frac{1}{2}$ د) $-\frac{1}{2}$ ١٠ ٢

سوال ۲

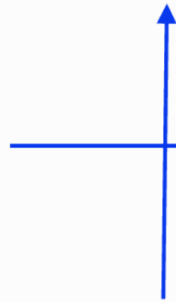
الف) $|y| = |x| \rightarrow y = \pm x$



تابع نیست!

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

جمع دو عبارت نامنفی برابر با صفر است، پس هر دو نام برابر صفر بوده است.



$f = \{(1, 0)\}$

تابع است!