

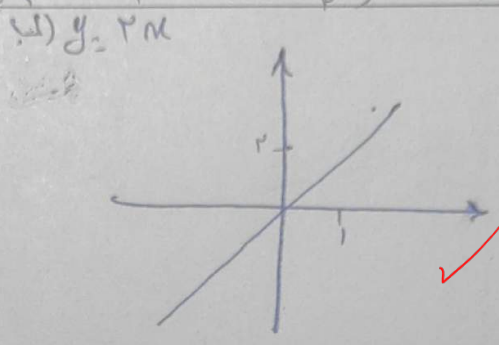
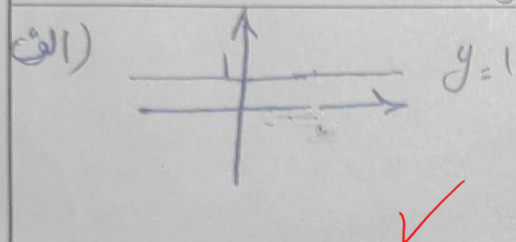
نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۳ کلاس: دهه: ۱۳۸۳

کتاب: حساب دیفرانسیل و انتگرال

الف) $y^3 - x = 2x^2 \rightarrow y^3 = 2x^2 + x \rightarrow y = \sqrt[3]{2x^2 + x}$ برای هر نقطه یک جواب داریم تابع هست یا نه
 $\checkmark$ $|y| + x^2 = x + 3 \rightarrow |y| = x - x^2 + 3 \xrightarrow{IF \ x=0} |y| = 3 \Rightarrow y = \pm 3$

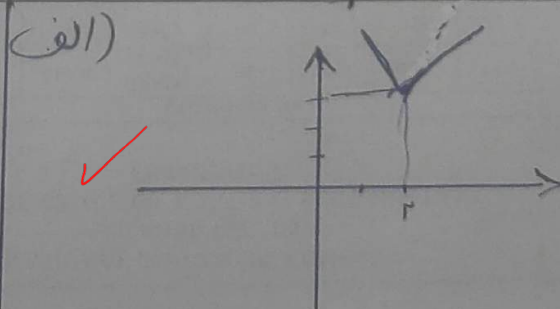
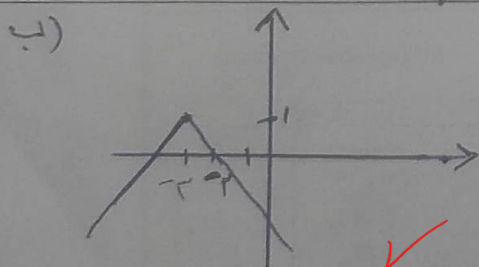
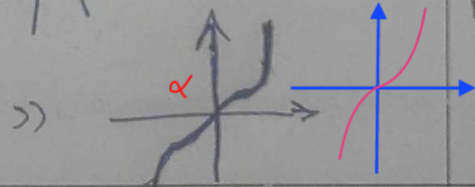
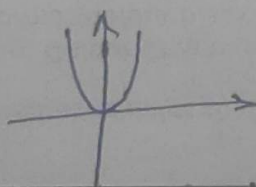
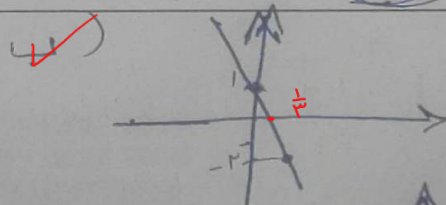
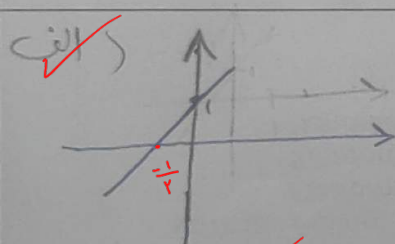
$\checkmark$ $\sqrt{x-4} + |y-2| = 0$ مجموع دو عدد حقیقی صفر نشود است پس هر دو عدد صفر بوده اند $\rightarrow x=4, y=2$ تابع است

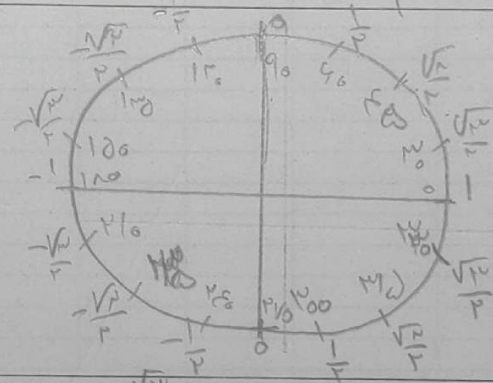
$\checkmark$ $x = \cos y \xrightarrow{IF \ y=0} \cos y = 0 \rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}$ تابع نیست $x \in \{2k\pi + \frac{\pi}{2}, 2k\pi - \frac{\pi}{2}\}$



الف) $y = ax + b$ $b=0$ $a=1 \rightarrow a+2b = 1 + (2 \times 0) = 1$

ب) $y = ax^2 + ax + b$
 $-\frac{b}{2a} = 2 \rightarrow -\frac{a}{2} = 2 \Rightarrow a = -4$
 $x + (2 \times (-4) + b) = 1 \rightarrow a+2b=1$
 $\hookrightarrow -4+b=1 \Rightarrow b=5$ $(b=5)$



1) $x^2 - rx \neq 0 \Rightarrow x \neq 0, r \Rightarrow Df = \mathbb{R} - \{0, r\}$ 2) $x^2 - \sqrt{x} + 14 \neq 0 \Rightarrow Df = \mathbb{R}$ 3) $x^2 + x + r \neq 0 \Rightarrow Df = \mathbb{R}$ 4) $x^2 - rx^2 \neq 0 \Rightarrow x^2 (x-r) \neq 0 \Rightarrow x \neq -r, 0, r \Rightarrow$ $Df = \mathbb{R} - \{-r, 0, r\}$	$\mathbb{R}$ 6
1) $y = \sqrt{4-x} + \sqrt{x-r}, 4-x \geq 0 \rightarrow x \leq 4, x-r \geq 0 \rightarrow x \geq r$ $r \leq x \leq 4, Df = [r, 4]$ 2) $y = \frac{rx+1}{x+1} \rightarrow Df = \mathbb{R} + \text{undefined}$ 3) $\frac{\sqrt{x-r}}{x-r} \rightarrow x-r \geq 0 \rightarrow x \geq r$ $x \neq r \Rightarrow Df = [r, +\infty) - \{r\}$	$y = \frac{rx+r}{ x +x^2} \quad x \neq 0$ $Df = \mathbb{R} - \{0\}$ 7
	$\mathbb{R}$ 8
	$\mathbb{R}$ 9
1) $\cos \frac{\pi}{5} = -(-\frac{1}{r}) = \frac{1}{r} \quad \sin \frac{\pi}{5} = \sin \frac{\pi}{5} = \frac{1}{r}$ 2) $\cos \frac{11\pi}{5} = -\frac{\sqrt{r}}{r} \quad \sin \frac{11\pi}{5} = \sin \frac{\pi}{5} = \frac{\sqrt{r}}{r}$	$\mathbb{R}$ 10