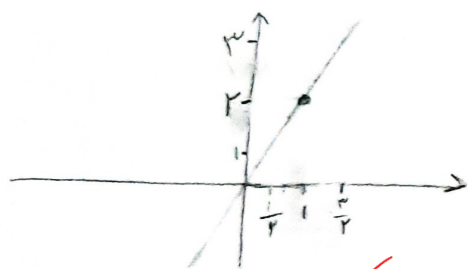


نام و نام خانوادگی: مدرسه: پاسنامه تشریحی تکلیف شماره ۳ کلاس رهم رختیج

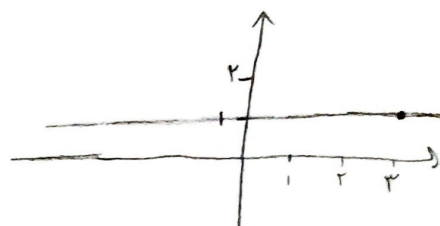
۱) $\begin{cases} y_1^3 = 2x_1^2 + x_1 \\ y_2^3 = 2x_2^2 + x_2 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 = y_2^3 \rightarrow y_1 = y_2 \rightarrow \text{تابع است}$

۲) $y = 3$ تابع نیست $y = -3$
 $|y| + x^2 = x + 3 \rightarrow |y| = -x^2 + x + 3 \xrightarrow{x=0} |y| = 3$

تابع است $|y-2| = 0 \rightarrow y = 2$ و $x = 4 \rightarrow \sqrt{x-4} = 0$ در عبارت که هیچ کدام نمی‌توانند منفی باشند با صفر برابر شده اند پس تابع است
 ۳) $x = \cos y \rightarrow x = \frac{1}{2} \xrightarrow{y = 60^\circ, y = 300^\circ}$ تابع نیست (به ازای یک x دو y داریم)



ضابطه: $y = 2x$



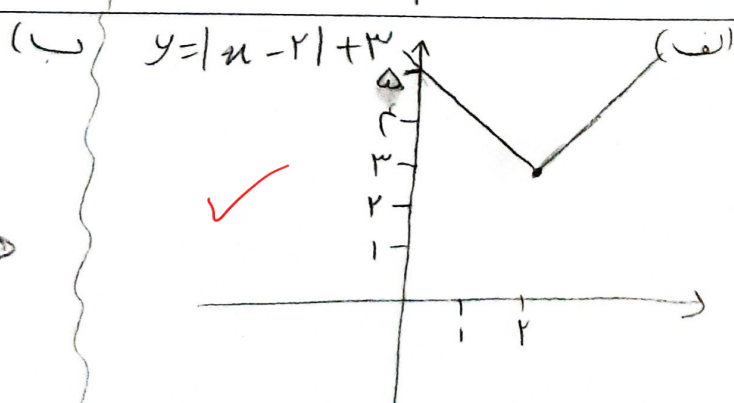
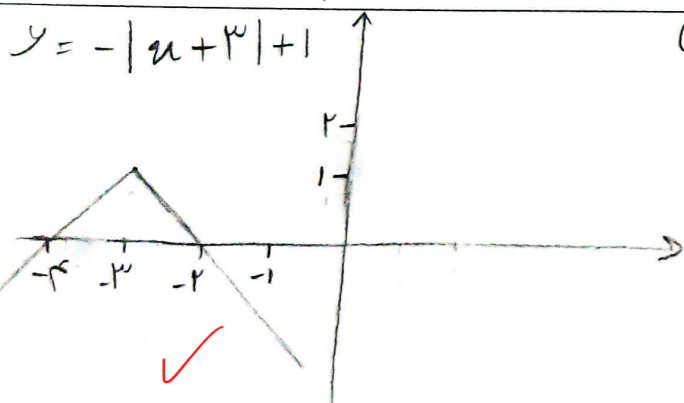
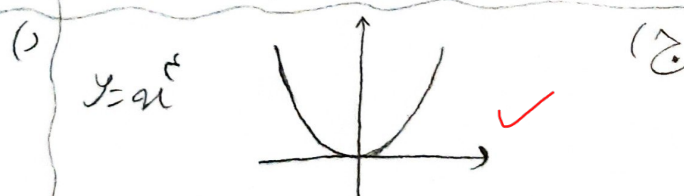
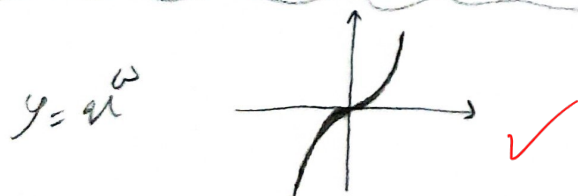
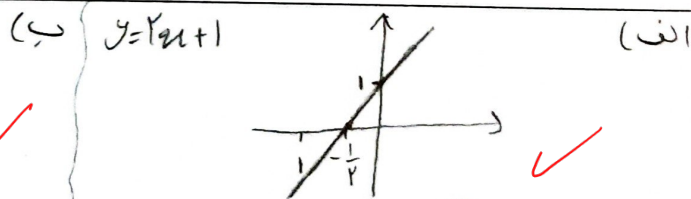
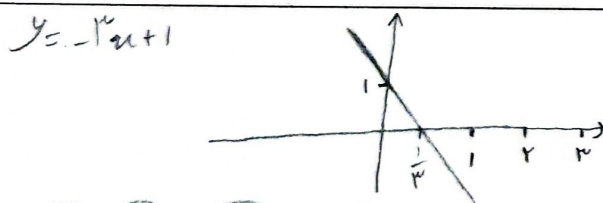
ضابطه: $y = 1$

$b = 0$ و $a = 1 \rightarrow$ خط با شیب ۱ و عرض از مبدأ صفر است (الف)

$a + 2b = 1 + (2 \times 0) = 1$

۳) $x^2 + ax + b \rightarrow x = -\frac{a}{2} = 2 \rightarrow a = -4 \rightarrow$

$2 + (-4)(2) + b = 1 \rightarrow b = 5 \rightarrow a + 2b = -4 + (2)(5) = 6$



✓ $u^2 - 4u \neq 0 \Rightarrow u(u-4) \neq 0 \Rightarrow u \neq 0, u \neq 4 \Rightarrow D_f = \mathbb{R} - \{0, 4\}$

✓ $u^2 - 4u + 16 \rightarrow \Delta = 16 - 4 \times 1 \times 16 = -64 < 0 \rightarrow D_f = \mathbb{R}$

✓ $u^2 + u + 4 \rightarrow \Delta = 1 - 4 \times 1 \times 4 = -15 < 0 \rightarrow D_f = \mathbb{R}$

✓ $u^4 - 4u^2 \rightarrow u^2(u^2 - 4) \rightarrow u^2(u-2)(u+2) \rightarrow u \neq 0, u \neq 2, u \neq -2$
 $D_f = \mathbb{R} - \{0, 2, -2\}$

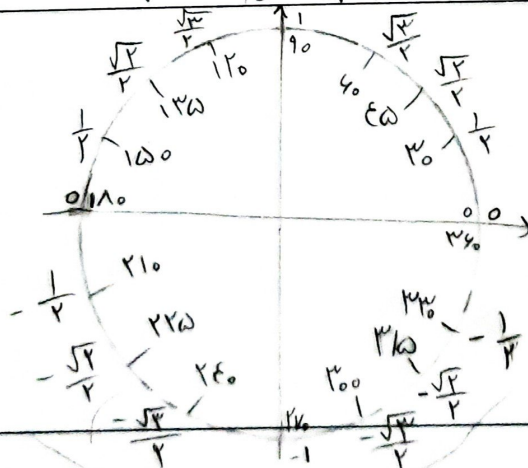
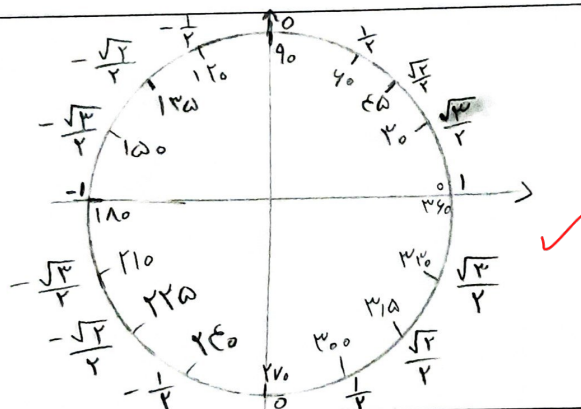
الف) $u - u \geq 0 \rightarrow u \leq 4, u - 2 \geq 0 \rightarrow u \geq 2 \rightarrow D_f = \{2, 3, 4\}$ نقطه‌های اعظم $D_f = [2, 4]$

✓ $u^2 + 1 \neq 0 \Rightarrow u^2 \neq -1 \rightarrow D_f = \mathbb{R}$

✓ $u - 2 \geq 0 \rightarrow u \geq 2, u - 4 \neq 0 \rightarrow u \neq 4 \rightarrow D_f = [2, 4) \cup (4, +\infty)$

✓ $|u| + u^2 \neq 0 \rightarrow u \neq 0 \rightarrow D_f = \mathbb{R} - \{0\}$

$|u| + u^2$ هیچگاه نمی‌تواند منفی باشد



✓ $1) -\cos \frac{2\pi}{3} \rightarrow -\cos 120^\circ = -(-\frac{1}{2}) = \frac{1}{2} \rightarrow \sin 120^\circ, \sin 30^\circ \rightarrow \sin \frac{2\pi}{3}, \sin \frac{\pi}{6}$

✓ $2) -\cos \frac{11\pi}{6} \rightarrow -\cos 330^\circ = -\frac{\sqrt{3}}{2} \rightarrow \sin 240^\circ, \sin 30^\circ \rightarrow \sin \frac{4\pi}{3}, \sin \frac{\pi}{6}$

$\sin \frac{4\pi}{3}, \sin \frac{5\pi}{6}$