

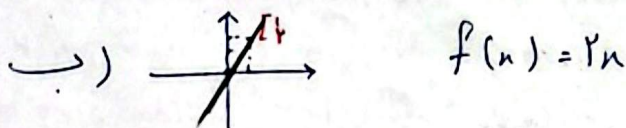
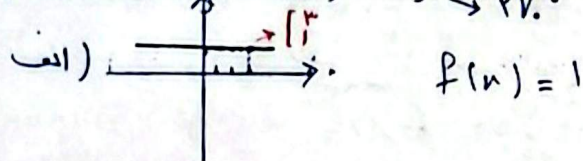
نام و نام خانوادگی پاسنامه تشریحی تکلیف شماره ۳ کلاس دهم ساعت ۱۸:۳۰ - ۱۹:۳۰

الف) $y^3 - x = 2x^2 \rightarrow \begin{cases} y_1^3 - x_1 = 2x_1^2 \rightarrow y_1^3 = 3x_1^2 \\ y_2^3 - x_2 = 2x_2^2 \rightarrow y_2^3 = 3x_2^2 \end{cases} \xrightarrow{x_1=x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ (تابع است)

ب) $|y| + x^2 = x + 3 \xrightarrow{x=1} |y| + 1 = 4 \quad |y| = 3 \rightarrow \begin{cases} y = 3 \\ y = -3 \end{cases}$ (تابع نیست)

ج) $\sqrt{x-4} + |y-2| = 0 \xrightarrow{x=4} 1 + |y-2| = 0 \rightarrow \begin{cases} y-2 = -1 \rightarrow y=1 \\ -y+2 = -1 \rightarrow y=3 \end{cases}$ (تابع نیست)

د) $x = \cos y \xrightarrow{y=0} x = 1$ (تابع است)



$x = ax + b$

الف) تابع همانی یعنی برای هر x مقدار تابع برابر x است.

$\rightarrow \boxed{a=1} \quad \boxed{b=0}$

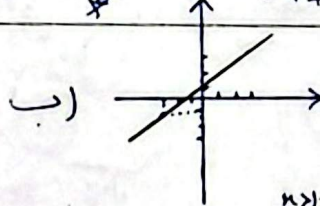
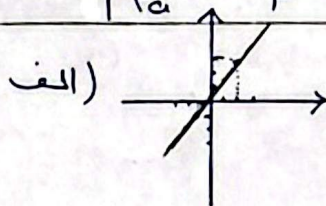
$a+2b = 1+0 = 1$

در سید $a=1$, $b=0$ با برابری

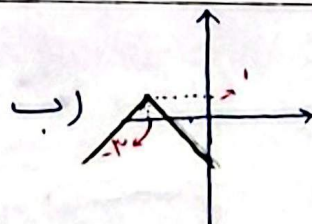
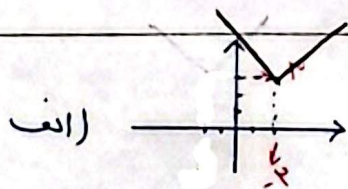
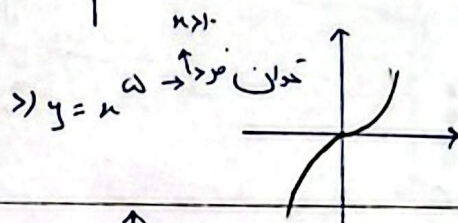
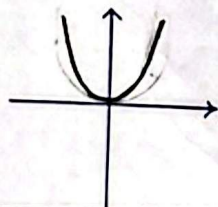
مث $\begin{cases} \frac{-b}{1a} \rightarrow \frac{-a}{1} = 2 & \frac{-a}{1} = 2 \Rightarrow a = -2 \\ \frac{-\Delta}{1a} \rightarrow \frac{-a^2+2b}{1} = 1 & \frac{-1^2+2b}{1} = 1 \Rightarrow -1+2b=1 \Rightarrow 2b=2 \Rightarrow b=1 \end{cases}$

$y = x^2 + ax + b$
 $y = ax^2 + bx + c$
 $-1 + b = 1 \Rightarrow b = 2$

$a+2b = -2+2(2) = 2$



ج) $y = x^2$ توان زوج



الف) $y = \frac{-x^2 + x}{x^2 + 4}$ $\frac{-x}{-x^2 + x} = \frac{x}{x^2 - x} \rightarrow D_f = [-x, 0) \cup (x, +\infty)$

ب) $y = \frac{x + x}{x^2 - 7x + 14} \rightarrow$ دنا صنف $\frac{-x}{-x^2 + x} \rightarrow D_f = [-x, +\infty)$

ج) $y = \frac{x + x}{x^2 + x + 4} \rightarrow$ دنا صنف $\frac{-x}{-x^2 + x} \rightarrow D_f = [-x, +\infty)$

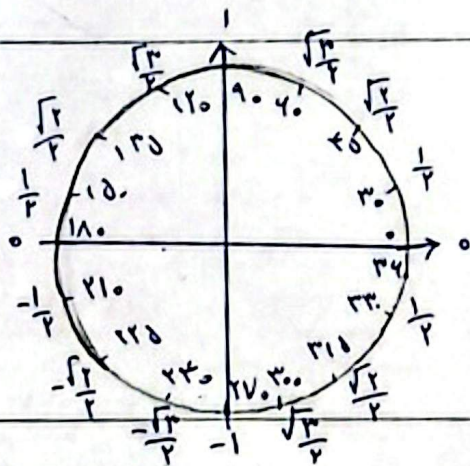
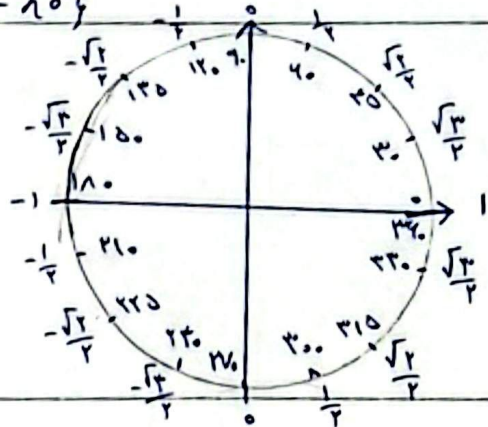
د) $y = \frac{x + x}{x^2(x-2)(x+2)}$ $\frac{-x}{-x^2 + x} = \frac{x}{x^2 - x} \rightarrow D_f = [-x, -2) \cup (2, +\infty)$

الف) $4 - x \geq 1 \quad x \geq 7, \quad x - 2 \geq 0 \quad x \geq 2 \rightarrow D_f = [-7, \infty)$

ب) $y = \frac{x^2 + 1}{x^2 + 1}$ $\begin{matrix} (+) \checkmark \\ (-) \checkmark \\ (0) \checkmark \end{matrix} \quad D_f = \mathbb{R}$

ج) $y = \frac{\sqrt{x-2}}{x-2}$ $\begin{matrix} (+) \checkmark \\ (-) \checkmark \\ (0) \checkmark \end{matrix} \quad D_f = \mathbb{R} - \{x\}$

د) $|x| + x^2$ $\begin{matrix} (+) \checkmark \\ (-) \checkmark \\ (0) \checkmark \end{matrix} \quad D_f = \mathbb{R} - \{0\}$



الف) $\cos \frac{1\pi}{3} \Rightarrow -\cos 120^\circ = +\frac{1}{2} \rightsquigarrow \sin, \sin 30^\circ$

ب) $-\cos \frac{1\pi}{4} \Rightarrow -\cos 45^\circ = +\frac{\sqrt{2}}{2} \rightsquigarrow \sin 45^\circ, \sin 135^\circ$