

نام و نام خانوادگی نام شماره کلاس نام پاسنامه تشریحی تکلیف شماره ۲۰

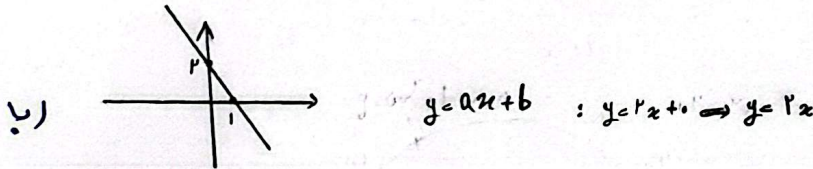
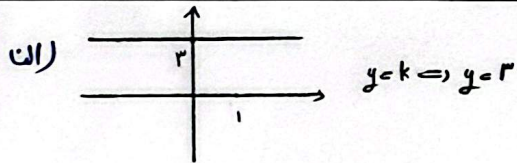
الف) $y^2 - x = 2x^2 \Rightarrow y^2 = 2x^2 + x$ $\xrightarrow{z_1 = x_1}$ تابع است $y^2 = 2x_1^2 + x_1$
 ب) $|y| + x^2 = x + 3 \Rightarrow |y| = -x_1^2 + x_1 + 3$ $\xrightarrow{z_1 = x_1}$ $|y_1| = -x_1^2 + x_1 + 3$

ج) $\sqrt{x-2} + |y-2| = 0$

$\sqrt{x-2} = -|y-2|$ $\xrightarrow{z_1 = x_1}$ $\sqrt{x_1-2} = -|y_1-2|$
 تابع نیست $y_1 - 2 = \pm (x_1 - 2)$

$|y_1| = |y_2| \Rightarrow y_1 = \pm y_2$ تابع نیست

د) $x = \cos y$ $y = 2k\pi + \frac{\pi}{2} \leftarrow x = 0$ تابع نیست

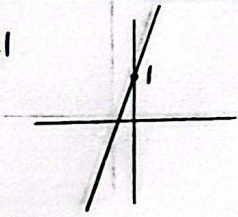


الف) $y = ax + b \Rightarrow$ جان: $y = x \Rightarrow \begin{cases} a=1 \\ b=0 \end{cases}$ $a+rb = 1+0=1$

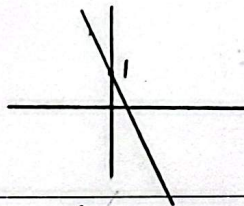
ب) $y = x^{\frac{1}{2}} + ax + b$

$x \Rightarrow -\frac{b}{ra} = r \Rightarrow -\frac{a}{r} = r \Rightarrow -a = r^2 \Rightarrow a = -r^2$ و $b = 0$
 $a+rb = -r^2 + 0 = -r^2$

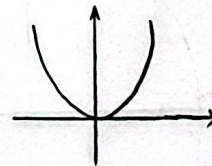
الف) $y = 2x + 1$



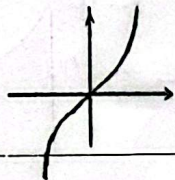
ب) $-3x + 1 = y$



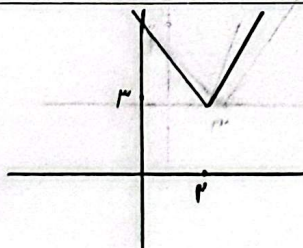
ج) $y = x^2$



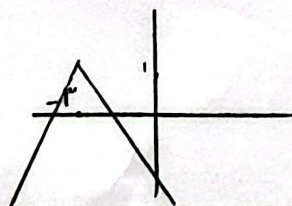
د) $y = x^3$



الف) $y = |x-2| + 3$



ب) $y = -|x+3| + 1$



$z \in \mathbb{R}$ ا) $\frac{z+1}{z^2-1} =$ $z^2-1 \neq 0 \Rightarrow$ 1) $z \neq 1$ 2) $z \neq -1$ $D_f = \mathbb{R} - \{1, -1\}$	$z \in \mathbb{R}$ ب) $\frac{z+1}{z^2-1} = \frac{z^2-1}{z^2-1} \neq 0$ $z^2-1 \neq 0 \Rightarrow$ 1) $z \neq 1$ 2) $z \neq -1$ $D_f = \mathbb{R} - \{1, -1\}$
$z \in \mathbb{R}$ ج) $\frac{z+1}{z^2+1} =$ $z^2+1 \neq 0 \Rightarrow$ $D_f = \mathbb{R}$	$z \in \mathbb{R}$ د) $\frac{z+1}{z^2-1} = \frac{z^2-1}{z^2-1} \neq 0$ $z^2-1 \neq 0 \Rightarrow$ 1) $z \neq 1$ 2) $z \neq -1$ $D_f = \mathbb{R} - \{1, -1\}$
ا) $\sqrt{4-x} + \sqrt{x-1} =$ $x \leq 4 \cup x \geq 1 \Rightarrow D_f = [1, 4]$	ب) $\frac{x+1}{x^2+1} = \frac{x^2+1}{x^2+1} \neq 0$ $x^2+1 \neq 0 \Rightarrow$ 1) $x \neq 1$ 2) $x \neq -1$ $D_f = \mathbb{R} - \{1, -1\}$
ج) $\frac{\sqrt{x-1}}{x-1} = \frac{1}{\sqrt{x-1}}$ $x \geq 1 \Rightarrow D_f = [1, +\infty) - \{1\}$	$z \in \mathbb{R}$ د) $\frac{z+1}{ z +z} = \frac{z^2+1}{ z +z} \neq 0 \Rightarrow D_f = \mathbb{R} - \{0\}$
ا) $\frac{1}{z} = \frac{1}{1} = 1$ $z = 1$	ب) $\frac{1}{z} = \frac{1}{-1} = -1$ $z = -1$