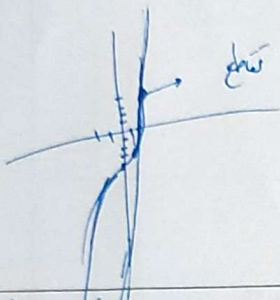


$$n^2 - 4 = 12n - 2 \Rightarrow n^2 - 12n + 12 = 0 \Rightarrow n = 6 \Rightarrow a = 6$$



$$n^2 - 12n + 12 = 0 \Rightarrow (n-4)(n-8) = 12n - 24 \Rightarrow n^2 + 2n - 8 = 0$$

$$(n+4)(n-2) = 0 \Rightarrow a = \text{union}(-\infty, -2] \cup [4, +\infty)$$

$$f(x) = 2 \Rightarrow 12 + k = 2 \Rightarrow k = -10 \Rightarrow f(x) = 3x + 1$$

$$f(v) = 11 - 1 = 10$$

$$f(3n-1) = 3(3n-1) - 1 = 9n - 4$$

$$\frac{an}{n-1} \Rightarrow n = \frac{y}{y-a} \Rightarrow y = \frac{n}{n-a} \xrightarrow{\times a} \frac{ya}{ya-a} = \frac{ya}{a} = y$$

$$y = a$$

الف) $0 \rightarrow 3 \rightarrow 5$	ب) $3 \rightarrow 0 \rightarrow 2$	ج) $2 \rightarrow 0 \rightarrow 0$	د) $0 \rightarrow 0 \rightarrow 9$
$1 \rightarrow 4 \rightarrow 1$	$4 \rightarrow 1 \rightarrow 4$	$1 \rightarrow 1$	$4 \rightarrow 1 \rightarrow 1$
$2 \rightarrow 1 \rightarrow 2$	$1 \rightarrow 2 \rightarrow 1$	$0 \rightarrow 9 \rightarrow 2$	$1 \rightarrow 2 \rightarrow 2$
$2 \rightarrow 9 \rightarrow 4$	$9 \rightarrow 2 \rightarrow 2$	$f \circ g^{-1} = \{(2,0)(0,2)\}$	$9 \rightarrow 2 \rightarrow 1$

$$f \circ f^{-1} = \{(0,0)(2,2)(4,4)\}$$

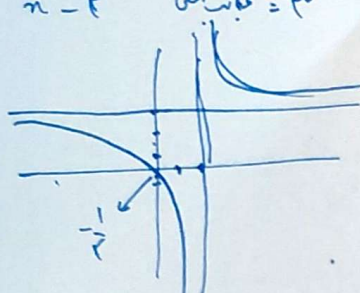
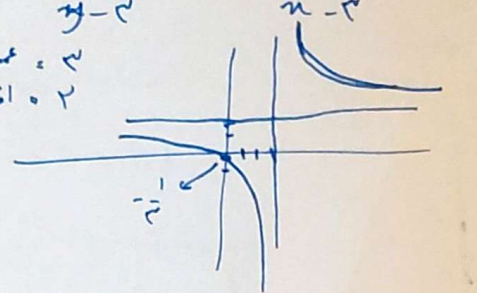
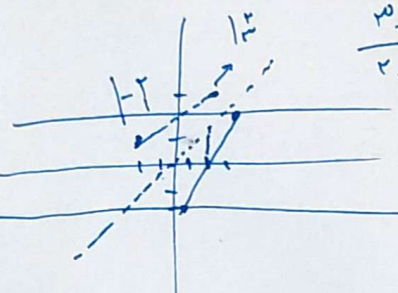
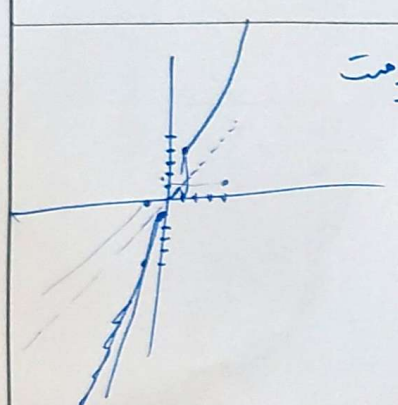
$$f \circ f^{-1} = \{(3,3)(4,4)(1,1)(9,9)\}$$

$$g \circ f^{-1} = \{(2,9)(1,3)(9,1)\}$$

$$g^{-1} = \{(1,3)(3,4)(0,4)\}$$

$$h \circ g^{-1} = \{(1,4)(3,1)(0,0)\}$$

$$h = \{(1,2)(2,4)(4,1)(0,1)\}$$

$\frac{2n+1}{n-2}$ میانگین = 2 میانگین = 2 	تابع معکوس نیست $\Rightarrow$ $n = \frac{2y+1}{y-2} \Rightarrow y = \frac{2n+1}{n-2}$ عمودی = 2 افقی = 2 	6
$f(n) = n-1 - n-2 $ $n > 2 \rightarrow n-1 - n+2 = 1$ $n < 1 \rightarrow -n+1 + n-2 = -1$ $n \in [1, 2]$	 $\frac{2-1}{2+2} = \frac{1}{4}$ $\frac{1}{4}n + 2 = y$	7
	دارن ضربت $n^2 + 4 = y \Rightarrow y + 4 = n^2 = \sqrt{y+4} = y \quad (n > 2)$ $(n-1) = y \Rightarrow y-1 = 4n \Rightarrow \frac{n-1}{4} = y \quad (n < -1)$	8
$\frac{x^2 + \frac{1}{x} - x - \frac{1}{x} - 2n - 1}{n+2} \Rightarrow \frac{-2n-1}{n+2}$ دارن $\frac{-2n-1}{n+2} = \frac{2(-2n-1)}{2(n+2)}$ $\frac{-2n-2}{2n+4} = \frac{an+b}{cn+d} \Rightarrow \begin{matrix} a=-4 \\ b=-2 \\ d=4 \end{matrix}$ $f^{-1}(b) = \frac{12-2}{2} = 5$	9	
$y = \frac{n_0}{n+1}$ معکوس $n = \frac{-y}{y^2-1} \Rightarrow y = \frac{-n}{n^2-1}$ $n \neq 0 \Rightarrow$ معکوس	10	