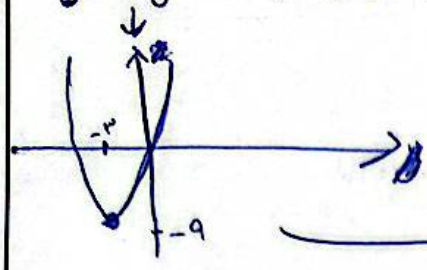


$y^2 + 4y = -2x^2 + 4x - k \Rightarrow -2x^2 + 4x - k = -9$
 $2x^2 - 4x + k - 9 = 0 \Rightarrow \Delta \geq 0 \Rightarrow 16 \geq 4(k-9) \Rightarrow 4 \geq k-9 \Rightarrow k \leq 13$
 اگر نامتناهی است پس از ۹ به بالا است
 این نمودار رو ترسیم کن
 که اون نقطه ۹-هست
 قطع میکنه



$a^2 + 4a = 2a + a + 2$
 $a^2 + a - 2 = 0 \Rightarrow \begin{cases} 1 \checkmark \\ 4-2 \text{ غلط} \end{cases} \Rightarrow f(1) = 1 + 4 = 5$

$|x+1| \geq 2 \Rightarrow x+1 \geq 2 \cup x+1 \leq -2 \Rightarrow x \geq 1 \cup x \leq -3$
 $\Rightarrow$ چون تابع است
 ۱-۲ در هر ۲ ضابطه باید یکسان عمل کنه
 $2-b = a+2 \Rightarrow a+b = 2-2=0$

چون داریم
 $n(x-2) = 4x-a \Rightarrow n=4 \quad a=12$
 $m(2-x) = b-3x \Rightarrow m=3 \quad b=6$
 $\frac{b}{a} = \frac{6}{12} = \frac{1}{2}$

$\frac{x+1}{|x-2|} \geq 0 \Rightarrow x \in [-1, +\infty) - \{2\} \text{ (I)}$
 $\frac{4-x}{4-x} \geq 0 \Rightarrow x \leq 4 \text{ (II)}$
 $(I) \cap (II) = [-1, 4] - \{2\}$

$[x] \geq 4 \Rightarrow [4, +\infty)$
 $2 \geq [x] \Rightarrow (-\infty, 3)$
 $\cap \Rightarrow \emptyset$

$y = \sqrt{\frac{x^2 - x - 6}{x^2 - 12x + 36}}$	$\text{الف) } \begin{array}{c} -9 \quad -4 \quad -2 \quad 2 \quad 4 \quad 9 \\ + \quad - \quad + \quad - \quad + \quad - \\ \hline 0 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \end{array}$ $D_f = \mathbb{R} - [-9, -4] - (-2, 2) - [4, 9]$	٦
$\frac{(x-1)(x+2)(x-3)}{(x+1)(x+3)(x-2)} \geq 0$	$\text{ب) } \begin{array}{c} -2 \quad -1 \quad 1 \quad 2 \quad 3 \\ + \quad - \quad + \quad - \quad + \\ \hline 0 \quad 0 \quad 0 \quad 0 \quad 0 \end{array}$ $D_f = \mathbb{R} - [-2, -1] - [1, 2] - [3, 3]$	٧
$[-x] - 2 \geq 0 \quad [-x] \geq 2$ $(-x) \in [2, +\infty) \Rightarrow x \in (-\infty, -2]$	$\text{الف) } (-)$	٧
$[x] = 1$ $x^2 - 2x + 1 \neq 0 \Rightarrow \begin{cases} x \neq 1 \Rightarrow [x] \neq 1 & x \notin [1, 2) \\ x \neq 2 \Rightarrow [x] \neq 2 & x \notin [2, 3) \end{cases} \Rightarrow \mathbb{R} - [1, 2) - [2, 3)$	$(-)$	٧
$\tan x \neq -1$ $\sin \neq 0$ $\cos \neq 0$	$\Rightarrow \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{2}\}$	$\text{الف) } (-)$
$1 \geq \epsilon \sin^2 \quad \frac{1}{\epsilon} \geq \sin^2 \quad \frac{1}{\epsilon} \geq \sin^2 \Rightarrow \sin \leq \frac{1}{\sqrt{\epsilon}} \cup \sin \geq \frac{1}{\sqrt{\epsilon}}$ 	$D_f = [k\pi - \frac{\pi}{\sqrt{\epsilon}}, k\pi + \frac{\pi}{\sqrt{\epsilon}}]$	٨
$1 \geq \log_{\frac{1}{x-1}} x$ $x-1 > 0 \quad x > 1 \text{ (I)}$	$\frac{1}{x} \leq x-1 \quad \frac{x}{x} \leq x \text{ (II)}$ $(I) \cap (II) = [\frac{x}{x} + \infty)$	$\text{الف) } (-)$
$2x^2 - 3x > 0$ $0 \quad 2 \quad 3$ $+ \quad - \quad +$ $0 \quad 0 \quad 0$ (I)	$1 \neq \log_{\frac{x^2+x}{x}} x$ $x^2 - x \geq 0$ $0 \quad 1 \quad 1$ $+ \quad - \quad +$ $0 \quad 0 \quad 0$ (III) $\{ \neq x^2 - 3x \Rightarrow x^2 - 3x + 1 \neq 0 \} \Rightarrow \begin{cases} \neq -1 \\ \neq 1 \end{cases} \text{ (II)}$ $(I) \cap (II) \cap (III) \Rightarrow (-\infty, 0) \cup (2, +\infty) - \{-1, 1\}$	$(-)$
$x^2 - 1 \geq 0$ $x^2 - 1 \geq 1 \Rightarrow -x^2 + 2x \geq 2 \Rightarrow x^2 - 2x + 2 \leq 0$	$\begin{array}{c} 1 \quad 2 \\ + \quad - \\ \hline 0 \quad 0 \end{array}$ $D_f = [1, 2]$	$\text{الف) } (-)$
$y = (\frac{x^2 + \omega}{x^2 + \epsilon})!$ $\frac{x^2 + \omega}{x^2 + \epsilon} \in \mathbb{W} \Rightarrow x \in \frac{-\epsilon \mathbb{W} + \omega}{x \mathbb{W} - \epsilon}$ $D_f = \{x \mid x = \frac{-\epsilon K + \omega}{x K - \epsilon}, K \in \mathbb{W}\}$	$(-)$	١٠