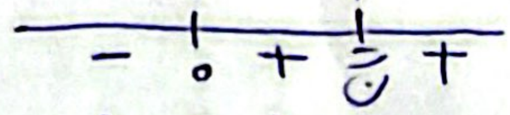
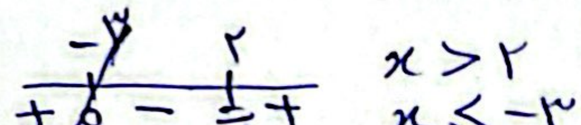
⑦ الف) $\frac{x^2-4x+3}{x-3} > 0$ $\quad \frac{(x-1)(x-3)}{x-3} > 0$



$x-3 \neq 0$ $\quad D_f = [1, +\infty) - \{3\}$

$x \neq 3$

ب) $\frac{x+3}{x-3} > 0$



$x+5 > 0$ $\quad x+5 \neq 1$ $\quad x > 3$ $\quad x \leq -3$

$x > -5$ $\quad x \neq -4$ $\quad D_f = (-5, -3] \cup (3, +\infty) - \{-4\}$

⑧ الف) $x-2 > 0$ $\quad 3 - \log_2^{(x-2)} \geq 0$

$x > 2$ $\quad \log_2^{(x-2)} \leq 3$ $\quad x-2 \leq 1$ $\quad D_f = (2, 10]$

$x \leq 10$

ب) $x > 0$

$2\log_3^x - 1 > 0$ $\quad \log_3^x > \frac{1}{3}$ $\quad D_f = (\sqrt{3}, +\infty)$

$2\log_3^x > 1$ $\quad x > \sqrt{3}$

⑨ الف) $4^x + 1 \neq 0$ $\quad D_f = R$

$4^x \neq -1$

ب) $4^x \neq 1$ $\quad D_f = R - \{\log_4^1\}$

$\log_4^1 = x$ $\quad \underline{\iota}\ R - \{0\}$

ج) $4^x \neq 2$ $\quad \log_4^2 \neq x$ $\quad D_f = R - \{\log_4^2\}$

د) $4^x \neq 3$

$\log_4^3 \neq x$

$D_f = R - \{\log_4^3\}$

⑩ الف) $4x+1 \in \omega$

$x \in \frac{\omega - 1}{4}$ $\quad D_f = \{x \mid x = \frac{k-1}{4}, k \in \omega\}$

ب) $\frac{3x-2}{2x-5} \in \omega$ $\quad 4x-2 \in 2\omega x - 5\omega$

$3x - 2\omega x \in -5\omega + 2$

$x(3-2\omega) \in \left(\frac{5\omega+2}{3-2\omega}\right)^{x-}$

$D_f = \{x \mid x = \frac{+5k-2}{2k-3}, k \in \omega\}$

① الف) $2\cos x+1\neq 0$

$2\cos\neq -1$

$\cos\neq -\frac{1}{2}\rightarrow 120^\circ, 240^\circ$

$D_f=R-\{2k\pi+\frac{2\pi}{3}, 2k\pi+\frac{4\pi}{3}\}$

ب) $\cos x\neq 1\rightarrow 0$ $\quad D_f=R-\{2k\pi\}$

② الف) $\tan x\neq -1\rightarrow \frac{\sin}{\cos}\neq -1$, $\cos\neq 0\rightarrow 90^\circ, 270^\circ, 135^\circ, 315^\circ$

$D_f=R-\{k\pi+\frac{\pi}{2}, k\pi-\frac{\pi}{4}\}$

ب) $\cot x\neq 1$, $\frac{\cos}{\sin}\rightarrow \sin\neq 0\rightarrow 0, 180^\circ, 360^\circ, 45^\circ$

$D_f=R-\{k\pi, k\pi+\frac{\pi}{4}\}$

③ الف) $-1\leq x^2-2\leq 1$

$1\leq x^2\leq 3$

$\sqrt{1}\leq x\leq\sqrt{3}$ و $-\sqrt{3}\leq x\leq -\sqrt{1}$

$D_f=[1,\sqrt{3}]\cup[-\sqrt{3},-1]$

ب) $-1\leq\sqrt{x}-3\leq 1$

$2\leq\sqrt{x}\leq 4$

$4\leq x\leq 16$ $\quad D_f=[4,16]$

④ الف) $-1\leq|x|-3\leq 1$

$2\leq|x|\leq 4$

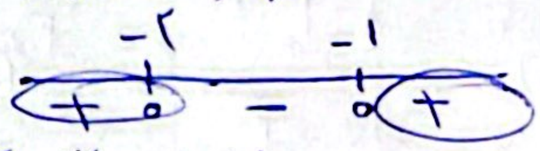
$D_f=[-4,-2]\cup[2,4]$

$2\leq x\leq 4$

$-4\leq x\leq -2$

ب) $-1<x^2+3x+1\leq 1$

$\begin{cases} x^2+3x+1\geq -1 \\ x^2+3x+2\geq 0 \\ (x+1)(x+2)\geq 0 \end{cases}$



$\begin{cases} x^2+3x+1\leq 1 \\ x^2+3x\leq 0 \\ x(x+3)\leq 0 \end{cases}$

$D_f=[-3,-2]\cup[-1,0]$

⑤ الف) $x^2-4>0$

$x^2>4$

$x>2$ و $x<-2$ $\quad D_f=(-\infty,-2)\cup(2,+\infty)$

ب) $2-|x|>0$

$2>|x|$

$-2<x<2$ $\quad D_f=(-2,2)$

⑥ الف) $5-x>0\rightarrow x<5$

$x-4>0\quad x>4$ $\quad D_f=(4,5)-\{4\}$

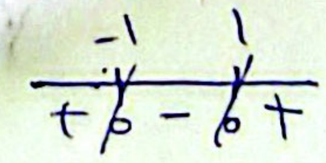
$x-4\neq 1\quad x\neq 5$

ب) $x^2-1>0$

$(x+1)(x-1)>0$

$x+2>0\quad x>-2$

$x+2\neq 1\rightarrow x\neq -2$



$\rightarrow x>1$ یا $x<-1$

$D_f=(-2,-1)\cup(1,+\infty)-\{-2\}$