الف) $\log^{a-x}_{x-2}$ $\quad a-x>0 \quad a>x \quad x-2\neq 1 \quad x\neq 3$ $\quad x-2>0 \quad x>2$

$D_f=(2,a)-\{3\}$ یا $D_f=(2,3)\cup(3,a)$

ب) $y=\log^{x^2-1}_{x+2}$ $\quad x^2-1>0 \quad x^2>1 \quad x>1 \quad x<-1$ $\quad x+2>0 \quad x>-2 \quad , x\neq -1$

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

الف) $y=\log \frac{x^2-4x+3}{x-3}$ $\quad \frac{x^2-4x+3}{x-3}=\frac{(x-1)(x-3)}{(x-3)}$

$D_f=(1,3)\cup(3,+\infty)$

ب) $y=\log \frac{x+2}{x-2}$ $\quad x+a>0 \quad x+a\neq 1 \quad x\neq -1$ $\quad a>-a$

$\frac{x+2}{x-2}>0$

$D_f=(-a,-1)\cup(2,+\infty)-\{-1,3\}$

الف) $y=\sqrt{2-\log^{(x-2)}_{2}}$ $\quad 2-\log^{(x-2)}_{2}\geq 0 \quad -\log^{(x-2)}_{2}\geq -2 \quad \log^{(x-2)}_{2}\leq 2 \quad (x-2)\leq 4$

$a=b^c$ $\quad x-2>0 \quad x>2$ $\quad x\leq 6$

$D_f=(2,6]$

ب) $y=\log(2\log^{x}_{3}-1)$ $\quad x>0 \rightarrow 2\log^{x}_{3}-1>0 \rightarrow 2\log^{x}_{3}>1 \rightarrow \log^{x}_{3}>\frac{1}{2} \rightarrow x>3^{\frac{1}{2}} \rightarrow x>\sqrt{3}$

$D_f=(\sqrt{3},+\infty)$

الف) $y=\frac{3}{4^x+1}$ $\quad 4^x+1\neq 0 \quad 4^x\neq -1 \rightarrow D_f=R$

ب) $y=\frac{3}{4^x-1}$ $\quad 4^x-1\neq 0 \quad 4^x\neq 1 \quad x\neq 0 \rightarrow D_f=R-\{0\}$

2) $y=\frac{3}{4^x-2}$ $\quad 4^x-2\neq 0 \quad 4^x\neq 2 \rightarrow D_f=R-\{\log^{2}_{4}\}$

3) $y=\frac{2}{4^x-4}$ $\quad 4^x-4\neq 0 \quad 4^x\neq 4 \rightarrow D_f=R-\{\log^{4}_{4}\}$

الف) $y=(4x+1)!$ $\quad 4x+1\in W \quad 4x\in W-1 \quad x\in \frac{W-1}{4}$

$D_f=\{x/x=\frac{k-1}{4}, k\in W\}$

ب) $y=(\frac{2x-2}{5x-5})!$ $\quad \frac{2x-2}{5x-5}\in W \quad 2x-2\in 5xW-5W \quad x\in \frac{2-5W}{2-2W}$

$4x-2\in 5xW-5W$

$x(2-2W)\in 2-5W$

$D_f=\{x/x=\frac{2-5k}{2-2k}, k\in W\}$

نام و نام خانوادگی: بهنا محمدیان کلاس: B پایه: دهم

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الف) $\frac{\sin x - 2}{2\cos x + 1}$ $2\cos x + 1 \neq 0$ $\cos x \neq -\frac{1}{2}$ $\cos x \neq \frac{2\pi}{3}, \frac{4\pi}{3}$ $D_f = R - \{2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}\}$

ب) $\frac{\sin x + 2}{\cos x - 1}$ $\cos x - 1 \neq 0$ $\cos x \neq 1$ $\cos x \neq 0$ $D_f = R - \{2k\pi + 0\}$ $D_f = R - \{2k\pi\}$

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الف) $\frac{2\sin x + 1}{\tan x + 1}$ $\tan x + 1 \neq 0$ $\tan x \neq -1$ $\tan x \neq 135^\circ, 315^\circ$ $\frac{3\pi}{4}, \frac{7\pi}{4}$ $\tan = \frac{\sin x}{\cos x}$ $\cos x \neq 0$ $\cos x \neq 90^\circ, 270^\circ$ $\frac{\pi}{2}, \frac{3\pi}{2}$ $D_f = R - \{k\pi + \frac{\pi}{4}, k\pi + \frac{\pi}{2}\}$

ب) $\frac{\cos x + 1}{\cot x - 1}$ $\cot x - 1 \neq 0$ $\cot x \neq 1$ $\frac{\pi}{4}$ $\cot x \neq 225^\circ, 45^\circ$ $\frac{5\pi}{4}$ $\cot x = \frac{\cos x}{\sin x}$ $\sin x \neq 0$ $\sin x \neq 0^\circ, 180^\circ$ $D_f = R - \{k\pi + \frac{\pi}{4}, k\pi\}$

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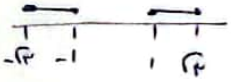
الف) $y = \sin(x^2 - 2)$ $-1 \leq x^2 - 2 \leq 1$ $1 \leq x^2 \leq 3$ $x^2 \geq 1$ $x^2 \leq 3$ $-\sqrt{3} \leq x \leq -1$ $1 \leq x \leq \sqrt{3}$



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

ب) $y = \arccos(\sqrt{x} - 2)$ $-1 \leq \sqrt{x} - 2 \leq 1$ $1 \leq \sqrt{x} \leq 3$ $1 \leq x \leq 9$

$D_f = [1, 9]$

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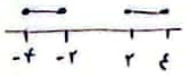
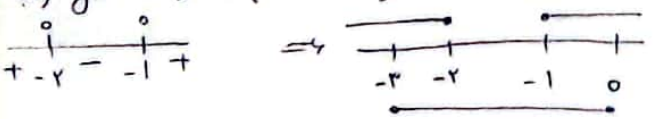
الف) $\cos y = |x| - 2$ $-1 \leq |x| - 2 \leq 1$ $1 \leq |x| \leq 3$ $1 \leq x \leq 3$ $-3 \leq x \leq -1$



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

ب) $y = \arcsin(x^2 + 2x + 1)$ $0 \leq (x+1)^2 \leq 1$ $0 \leq x^2 + 2x + 1 \leq 1$ $-1 \leq x^2 + 2x \leq 0$ $-2 \leq x \leq 0$



$D_f = [-2, 0]$

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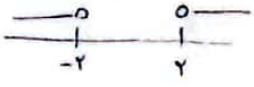
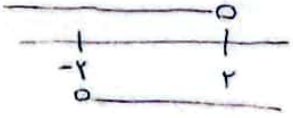
الف) $y = \log_3^{x^2 - 4}$ $x^2 - 4 > 0$ $x^2 > 4$ $x < -2$ $x > 2$



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

ب) $y = \log_2^{|x| - 2}$ $|x| - 2 > 0$ $|x| > 2$ $x < -2$ $x > 2$



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