

$\cos x + 1 \neq 0$ $\cos x \neq -1$ $\cos x \neq -\frac{1}{2}$ $D_F = \mathbb{R} - \left\{ 2k\pi + \frac{2}{3}\pi, 2k\pi + \frac{4}{3}\pi \right\}$	الف	$\cos x - 1 \neq 0$ $\cos x \neq 1$ $D_F = \mathbb{R} - \{ 2k\pi, k \in \mathbb{Z} \}$	ب	۱
$\tan x + 1 \neq 0$ $\tan x \neq -1$ $D_F = \mathbb{R} - \left\{ k\pi - \frac{\pi}{4} \right\}$	الف	$\cot x - 1 \neq 0$ $\cot x \neq 1$ $D_F = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4} \right\}$	ب	۲
$-1 < x^2 - 2 < 1$ $1 < x^2 < 3$ $\sqrt{1} < x < \sqrt{3}$ $D_F = [1, \sqrt{3}] \cup [-\sqrt{2}, -1]$	الف	$x > 0$ $-1 < \sqrt{x} - 2 < 1$ $2 < \sqrt{x} < 4$ $4 < x < 16$ $D_F = [9, 16]$	ب	۳
$-1 < x - 2 < 1$ $2 < x < 4$ $D_F = [2, 4] \cup [-2, -4]$	الف	$-1 < x^2 + 3x + 1 < 1$ $x^2 + 3x + 1 \geq -1 \rightarrow x^2 + 3x + 2 \geq 0$ $(x+1)(x+2) \geq 0$ $x^2 + 3x + 1 \leq 1$ $x^2 + 3x \leq 0$ $x(x+3) \leq 0$ $D_F = (-3, -1] \cup [-1, 0]$	ب	۴
$x^2 - 4 > 0$ $x^2 > 4$ $x > 2$ $D_F = (2, \infty) \cup (-\infty, -2)$	الف	$2 - x > 0$ $2 > x $ $2 > x$ $-2 < x$ $D_F = (-2, 2)$	ب	۵

$5-x > 0 \rightarrow 5 > x$ $x-3 > 0 \rightarrow x > 3$ $D_f = (3, 5)$	الف	$x^2-1 > 0 \rightarrow x^2 > 1 \rightarrow x > \sqrt{1} \text{ II}$ $x+2 > 0 \rightarrow x > -2 \text{ I}$ $D_f = \mathbb{R} \cap \text{II} \rightarrow x > \sqrt{1}$	٦
$(x-3)(x-1)$ $\log(x-3)$ $(x-3)(x-1) > 0 \quad \frac{1}{x-1} > 0 \quad (\infty, 1) \cup (3, \infty)$ $D_f = (-\infty, 1) \cup (3, \infty)$	الحق	$\frac{x+2}{x^2-2} > 0 \rightarrow x-2 > 0 \rightarrow x > 2 \text{ I}$ $x+5 > 0 \rightarrow x > -5 \text{ II}$ $D_f = \mathbb{R} \cap \text{II} = x > 2 \rightarrow (2, \infty)$	٧
$3 - \log_2(x-2) > 0 \quad x-2 > 0 \rightarrow x > 2 \text{ I}$ $\log_2(x-2) < 3$ $x-2 < 8$ $x < 10 \text{ II}$ $D_f = \mathbb{R} \cap \text{II} = 2 < x < 10$	الحق	$x > 0$ $21 - \log_{x-1} > 0$ $\log_{x-1} > \frac{1}{x}$ $D_f = (\sqrt{2}, +\infty)$	٨
$f_{x+1}^x \neq 0$ $f_{x-1}^x \neq -1$ $D_f = \mathbb{R}$	الف	$f_{x-1}^x \neq 0$ $f_x^x \neq 1$ $x \neq 0$ $D_f = \mathbb{R} - \{0\}$	ب
$f_{x-1}^x \neq 0$ $f_x^x \neq 2$ $D_f = \mathbb{R} - \{\frac{1}{2}\}$	ج	$f_{x-1}^x \neq 0$ $f_x^x \neq 3$ $D_f = \mathbb{R} - \{\log_2^x\}$	د
$f_{x+1} \in \mathbb{W}$ $f_x \in \mathbb{W}-1$ $D_f = \{x \mid x = \frac{k-1}{f}, k \in \mathbb{W}\}$	الف	$\frac{3x-2}{x^2x-5} \in \mathbb{W}$ $x \neq \frac{5}{2}$ $D_f = \{x \in \mathbb{R} \mid \frac{3x-2}{x^2x-5} \in \mathbb{W}, x \neq \frac{5}{2}\}$	ب
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