

19175

الف) $y = \frac{\sin x - 2}{2 \cos x + 1}$ $2 \cos x + 1 \neq 0$ $2 \cos x \neq -1$ $\cos x \neq -\frac{1}{2}$



$D_f = \mathbb{R} - \left\{ 2k\pi \pm \frac{2\pi}{3} \right\}$

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ب) $y = \frac{\sin x + 3}{\cos x - 1}$ $\cos x - 1 \neq 0$ $\cos x \neq 1$ $D_f = \mathbb{R} - \{ 2k\pi \}$



الف) $y = \frac{2 \sin x + 1}{\tan x + 1}$ $\tan x + 1 \neq 0$ $\tan x \neq -1$

$\tan x \neq -1$



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

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ب) $y = \frac{\cos x + 1}{\cot x - 1}$ $\cot x - 1 \neq 0$ $\cot x \neq 1$

$\cot x \neq 1$



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

الف) $\sin y = x^2 - 2$ $-1 \leq x^2 - 2 \leq 1$ $1 \leq x^2 \leq 3$

$x^2 \geq 1 \rightarrow x \geq 1$ $x \leq -1$ $x^2 \leq 3 \rightarrow \sqrt{3} \leq x \leq \sqrt{3}$ $D_f = [-\sqrt{3}, -1] \cup [1, \sqrt{3}]$

ب) $y = \arccos(\sqrt{x} - 3)$ $-1 \leq \sqrt{x} - 3 \leq 1$ $2 \leq \sqrt{x} \leq 4$ $4 \leq x \leq 16$ $D_f = [4, 16]$

الف) $\cos y = |x| - 3$ $-1 \leq |x| - 3 \leq 1$ $2 \leq |x| \leq 4$

$|x| \geq 2 \rightarrow x \geq 2$ $x \leq -2$ $|x| \leq 4 \rightarrow -4 \leq x \leq 4$ $D_f = [-4, -2] \cup [2, 4]$

ب) $y = \arcsin(x^2 + 3x + 1)$ $-1 \leq x^2 + 3x + 1 \leq 1$

$-2 \leq x^2 + 3x \leq 0$ $x^2 + 3x \leq 0$ $x(x+3) \leq 0$

$\rightarrow \frac{x^2 + 3x + 2 \geq 0}{(x+1)(x+2)} \rightarrow \frac{-2}{+} \frac{-1}{+}$ $D_f = [-3, -2] \cup [-1, 0]$

الف) $y = \log_3 x^{2-3}$ $x^{2-3} > 0$ $x^2 > 3 \rightarrow x > \sqrt{3}$ $x < -\sqrt{3}$

$x^{2-3} > 0$

$x^2 > 3 \rightarrow x > \sqrt{3}$ $x < -\sqrt{3}$

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

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ب) $y = \log_3 \frac{2-|x|}{x}$ $2-|x| > 0$ $|x| < 2 \rightarrow -2 < x < 2$

$2-|x| > 0$

$|x| < 2 \rightarrow -2 < x < 2$

$D_f = (-2, 2)$

