

الف) $y = \frac{x^3 + 3x^2 - 11x + 3}{x^2 + 5x - 14}$ $x \neq 1, x \neq -7$

$$y = \frac{x^3 + 3x^2 - 11x + 3}{x^2 + 5x - 14} = \frac{(x-1)(x^2 + 4x - 7)}{(x-1)(x+7)}$$

ب) $y = \frac{x+3}{x^2 + 5x - 14}$ $D_f = \mathbb{R} - \{1, -7\}$

الف) $y = \frac{x^3 - 2x^2 + 11x - 1}{x^2 - 1 - 2x^2 + 4x}$ $D_f = \mathbb{R} - \{1\}$

ب) $y = \frac{x+3}{x^2 - 2x^2 + 11x - 1}$ $D_f = \mathbb{R} - \{1, -7\}$

الف) $y = \frac{2}{x^2 - 5|x-1| - 2x + 5}$ $D_f = \mathbb{R} - \{2, 5, 0, -3\}$

ب) $y = \frac{2}{x^2 - 5x + 1}$ $D_f = \mathbb{R} - \{1, 4\}$

الف) $y = \sqrt{[-x]-2}$ $D_f = (-\infty, 2]$

ب) $y = \frac{5x^2 + 4}{[x]^2 - 2[x] - 3}$ $D_f = \mathbb{R} - \{[3, 4] \cup (0, -1]\}$

الف) $y = \sqrt{[x - \frac{1}{n}] + [x + \frac{1}{n}]}$ $D_f = \mathbb{Z}$

ب) $y = \sqrt{[x - \frac{1}{n}] + [\frac{1}{n} - x]}$ $D_f = \mathbb{Z}$

الف) $y = \sqrt{[x - \frac{1}{n}] + [x + \frac{1}{n}]}$ $D_f = \mathbb{Z}$

ب) $y = \sqrt{[x - \frac{1}{n}] + [\frac{1}{n} - x]}$ $D_f = \mathbb{Z}$

الف) $y = \frac{\cot x + 1}{\tan x + 1}$ $\cot x \neq \infty$ $\sin x \neq 0$ $x \neq 0, \pi$
 $\tan x \neq \infty$ $\cos x \neq 0$ $x \neq \frac{\pi}{2}, \frac{3\pi}{2}$
 $\tan x \neq -1$ $x \neq \frac{3\pi}{4}, \frac{7\pi}{4}$

ب) $y = \sqrt{1 - r \sin x}$ $r \sin x \leq 1$ $\sin x \leq \frac{1}{r}$
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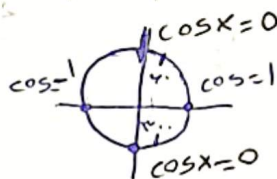


$[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}]$

الف) $y = \sqrt{r \sin x - 1}$ $r \sin x \geq 1$ $\sin x \geq \frac{1}{r}$

$[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}]$

ب) $y = \sqrt{1 - r \cos x}$ $r \cos x \leq 1$ $\cos x \leq \frac{1}{r}$



$[2k\pi + \frac{\pi}{r}, 2k\pi - \frac{\pi}{r}]$

الف) $y = \arcsin(x^2 + 4x + 1)$ $-1 \leq x^2 + 4x + 1 \leq 1$
 $\frac{1}{r} \leq x^2 + 4x + \frac{9}{r} \leq \frac{9}{r}$
 $\frac{1}{r} \leq (x + \frac{2}{r})^2 \leq \frac{9}{r}$
 $\frac{1}{r} \leq x + \frac{2}{r} \leq \frac{3}{r}$
 $-1 \leq x \leq 0$
 $[-1, 0]$

ب) $\cos y = \sqrt{5 - 2x}$
 $2x \leq 5$
 $x \leq \frac{5}{2}$
 $-1 \leq \sqrt{5 - 2x} \leq 1$
 $5 - 2x \leq 1$ $[2, \frac{5}{2}]$
 $2x \geq 4$
 $x \geq 2$

الف) $y = \log_r(1 - \log_r x)$ $x > 0$ $(0, 1)$
 $1 - \log_r x > 0$
 $\log_r x < 1$ $x < r$

ب) $y = \log_r(1 - \log_r \frac{x}{r})$ $x > 0$
 $\log_r \frac{x}{r} < 1$ $x > \frac{1}{r}$ $[\frac{1}{r}, +\infty)$

الف) $y = \sqrt{rx - x^2} - a$ $rx - x^2 \geq a$ $\frac{1}{r} \leq x \leq \frac{r}{r}$
 $rx - x^2 \geq a$
 $-x^2 + rx - a \geq 0$
 $x^2 - rx + a \leq 0$
 $(x - \frac{r}{2})^2 \leq \frac{r^2}{4} - a$
 $\frac{r}{2} \leq x \leq \frac{r}{2}$
 $Df = [1, r]$

ب) $y = \frac{rx + a}{rx + r}$

$\frac{rx + a}{rx + r} \in \mathbb{W}$
 $\frac{rx + a}{rx + r} = \frac{rw - a}{rw - r}$
 $x \in \frac{rw - a}{rw - r}$

$x \in \frac{rw - a}{rw - r}$ $Df = \{x | x = \frac{rw - a}{rw - r}, r \in \mathbb{W}\}$