

۲. آفرین

الف) $y = \frac{a+3}{2a^2+3a-1}$ $\Rightarrow D_f = \mathbb{R} - \{-3, \frac{1}{2}\}$

ب) $y = \frac{a+3}{2a^2+3a-1}$ $\Rightarrow D_f = \mathbb{R} - \{-3, \frac{1}{2}\}$

الف) $y = \frac{a+3}{a^2-2a+3}$ $\Rightarrow D_f = \mathbb{R} - \{0\}$

ب) $y = \sqrt{\frac{a+3}{a^2-2a+3}}$ $\Rightarrow D_f = \mathbb{R} - \{-3, 1\}$

$y = \frac{2}{a^2-2a+3}$ $\Rightarrow D_f = \mathbb{R} - \{-3, 0, 1\}$

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

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

الف) $y = \sqrt{[x-\frac{1}{2}]} + [x-\frac{1}{2}]$ $\Rightarrow D_f = [\frac{1}{2}, \infty)$

ب) $y = \sqrt{[x-\frac{1}{2}]} + [x-\frac{1}{2}]$ $\Rightarrow D_f = \mathbb{Z} + \frac{1}{2}$

الف) $y = \frac{c \cdot \tan x}{\tan x + 1}$ — $\cot x \neq \tan x$; $\tan x \neq -1 \Rightarrow x \neq K\pi - \frac{\pi}{4}$

$D_f = \mathbb{R} - \left[K\pi - \frac{\pi}{4}, K\pi - \frac{\pi}{4} \right]$

ب) $y = \sqrt{1 - 4 \sin^2 x} \Rightarrow 1 - 4 \sin^2 x \geq 0 \Rightarrow \sin^2 x \leq \frac{1}{4} \Rightarrow -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$

 $\Rightarrow D_f = \left[K\pi - \frac{\pi}{4}, K\pi + \frac{\pi}{4} \right]$

الف) $y = \sqrt{4 \sin^2 x - 1} \Rightarrow \sin^2 x \geq \frac{1}{4} \Rightarrow \sin x \geq \frac{1}{2} \text{ or } \sin x \leq -\frac{1}{2}$

 $D_f = \left[2K\pi + \frac{\pi}{6}, 2K\pi + \frac{5\pi}{6} \right] \cup \left[2K\pi + \frac{7\pi}{6}, 2K\pi + \frac{11\pi}{6} \right]$

ب) $y = \sqrt{1 - 2 \cos x} \Rightarrow 1 - 2 \cos x \geq 0 \Rightarrow \cos x \leq \frac{1}{2}$

 $D_f = \left[2K\pi + \frac{\pi}{3}, 2K\pi + \frac{5\pi}{3} \right]$

الف) $y = \arcsin(\cos x \cdot \tan x) \Rightarrow -1 \leq \cos x \cdot \tan x \leq 1 \Rightarrow \cos x \cdot \tan x \leq 1$

$\frac{-1}{+} \frac{-1}{-} \frac{+}{+}$

$\frac{-1}{+} \frac{0}{-} \frac{+}{+}$

$\frac{+}{-} \frac{+}{-} \frac{+}{+}$

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

ب) $y = \sqrt{\omega - \cos x} \Rightarrow -1 \leq \omega - \cos x \leq 1 \Rightarrow \omega - \cos x \leq 1 \Rightarrow \cos x \geq \omega - 1$

$\omega - \cos x \geq 0 \Rightarrow \cos x \leq \omega$

$D_f = D_f = \left[\frac{\pi}{3}, \frac{2\pi}{3} \right]$

الف) $y = \log_p(1 - \log_p^x)$ $x > 0$
 $1 - \log_p^x > 0 \Rightarrow 0 < x < 1 \Rightarrow D_f = (0, 1)$

ب) $y = \log_p(1 - \log_p^x)$ $x > 0$
 $1 - \log_p^x > 0 \Rightarrow \log_p^x < 1 \Rightarrow x > \frac{1}{p}$

$D_f = \left(\frac{1}{p}, \infty \right)$

الف) $y = \sqrt{\frac{x^2 - \omega^2}{x^2 - \omega^2}}$ $\frac{x^2 - \omega^2}{x^2 - \omega^2} \geq 1 \Rightarrow x^2 - \omega^2 \geq x^2 - \omega^2 \Rightarrow \omega^2 \leq 0$

$D_f = [1, \infty)$

ب) $y = \left(\frac{x^2 - \omega^2}{x^2 - \omega^2} \right)^{\frac{1}{p}}$ $\frac{x^2 - \omega^2}{x^2 - \omega^2} \in \mathbb{W} \Rightarrow x^2 - \omega^2 \in \mathbb{W} \Rightarrow D_f = \left\{ x \mid x^2 - \omega^2 \in \mathbb{W} \right\}$

$D_f = \left\{ x \mid x^2 - \omega^2 \in \mathbb{W} \right\}$