

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

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

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

ب) $y = \sqrt{\frac{a+3}{a^2-2a+1}} \Rightarrow \frac{a+3}{(a-1)^2} \geq 0$
 $\Delta < 0$
 $\Delta > 0$
 $D_f = \mathbb{R} - \{-3, 1\}$

$y = \frac{2}{a^2-2a+1} \Rightarrow \begin{cases} a > 1 \rightarrow a^2-2a+1 \neq 0 \rightarrow D_f \neq \infty, 1 \\ a \leq 1 \rightarrow a^2-2a+1 \neq 0 \rightarrow a \neq 0, -1 \end{cases}$
 $\Rightarrow D_f = \mathbb{R} - \{-3, 0, \infty, 1\}$

الف) $y = \sqrt{[a]-2} \Rightarrow [a]-2 \geq 0 \Rightarrow [a] \geq 2 \Rightarrow a \leq -2 \Rightarrow D_f = (-\infty, -2]$

ب) $y = \frac{\omega a^2+4}{[a]-2[a]-3} \Rightarrow [a]^2-2[a]-3 \neq 0 \Rightarrow ([a]-3)([a]+1) \neq 0$
 $\Rightarrow [a] \neq 3 \rightarrow \mathbb{R} - [3, 4)$
 $[a] \neq -1 \rightarrow \mathbb{R} - [-1, 0)$
 $D_f = (-\infty, -1) \cup [0, 3] \cup [4, \infty)$

الف) $y = \sqrt{[a-\frac{1}{3}]+[a+\frac{2}{3}]} \Rightarrow [a-\frac{1}{3}]+[a+\frac{2}{3}] \geq 0 \Rightarrow 2[a+\frac{1}{3}] \geq 0 \Rightarrow [a] \geq -\frac{1}{3} \Rightarrow a \geq -\frac{1}{3} \Rightarrow D_f = [-\frac{1}{3}, \infty)$
 $\Rightarrow [a+\frac{2}{3}] \geq \frac{1}{3} \Rightarrow a \geq -\frac{1}{3}$
 $\Rightarrow y = \sqrt{[a-\frac{1}{3}]+[a+\frac{2}{3}]} \xrightarrow{a=\frac{1}{3}+t} [t]+[-t] \geq 0 \Rightarrow t \in \mathbb{Z}$
 $\Rightarrow a - \frac{1}{3} \in \mathbb{Z} \Rightarrow a \in \mathbb{Z} + \frac{1}{3} \Rightarrow D_f = \{a \mid a = k + \frac{1}{3}, k \in \mathbb{Z}\}$

