

(۶) ؟ $\lim_{x \rightarrow +\infty} \frac{x^2 + 1}{x + b} = \frac{x^2 + 1}{x + b}$ $\lim_{x \rightarrow +\infty} \frac{x^2 + 1}{x + b} = \frac{x^2 + 1}{x + b}$ $\frac{x^2 + 1 + ax + ab}{a + b} = \frac{x(x + a) + 1 + ab}{x + b}$ و $D_f = (x, +\infty) \Rightarrow x + b \neq 0 \Rightarrow x \neq -b$ $\boxed{b - 1} = b \Rightarrow b = 1$	(۶)
الف) $y = \sqrt{x^2 - 1}$ $x(x^2 - 1) \geq 0 \Rightarrow x < 0, x = 1, x = -1$ $\frac{-1}{-1} + \frac{1}{1} = 0$ $D_f = [-1, 0] \cup [1, +\infty)$ ب) $y = \frac{1}{\sqrt{ x - 1}}$ $\Rightarrow x - 1 > 0 \Rightarrow x > 1$ (I) $x > 1$ (II) $x < -1$ $D_f = (-\infty, -1) \cup (1, +\infty)$	(۷)
الف) $y = \sqrt{\frac{1}{ x - [x]}}$ $\Rightarrow x - [x] \neq 0 \Rightarrow x \neq [x]$ $D_f = \mathbb{R} - \mathbb{Z}$ ب) $\sqrt{x} + \sqrt{y} = 4 \Rightarrow \sqrt{y} = 4 - \sqrt{x} \Rightarrow 4 - \sqrt{x} \geq 0 \Rightarrow \sqrt{x} \leq 4 \Rightarrow x \leq 16$ $x \geq 0 \Rightarrow x \in [0, 16]$	(۸)
$x + \frac{1}{x} = (x - \frac{1}{x}) + 2$ $y = \sqrt{(x - \frac{1}{x}) + (x + \frac{1}{x})} > 0$ $\Rightarrow \sqrt{2(x - \frac{1}{x})} > 0 \Rightarrow x - \frac{1}{x} > 0 \Rightarrow x > \frac{1}{x} \Rightarrow x^2 > 1 \Rightarrow x > 1$ $D_f = [1, +\infty)$	(۹)
الف) $x - a > 0 \Rightarrow x > a \Rightarrow x > \frac{a}{1}$ ب) $1 - \log(x - a) > 0 \Rightarrow \log(x - a) < 1 \Rightarrow x - a < 10 \Rightarrow x < a + 10$ $c - b \Rightarrow \frac{a+1}{1} - \frac{a}{1} \Rightarrow \frac{a+1-a}{1} = \frac{1}{1} = 1$	(۱۰)