

الف) $y = \sqrt{r \sin x - 1}$ $\sin x \geq \frac{1}{r}$ $D_f = \mathbb{R} \setminus \left[\frac{\pi}{4} + 2k\pi, \frac{5\pi}{4} + 2k\pi \right]$ ٢) ✓	ب) $y = \sqrt{\cos x - 1}$ $\cos x \neq 1$ $D_f = \mathbb{R} - \{2k\pi\}$	٦
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الف) $\cos y = x - 3$ $-1 \leq x - 3 \leq 1$ $2 \leq x \leq 4$ $D_f = [-4, -2] \cup [2, 4]$ ١, ٧, ٨	ب) $y = \arcsin(x^2 + 3x + 1)$ $-1 \leq x^2 + 3x + 1 \leq 1$ $0 \leq x^2 + 3x \leq 2$ $D = [-3, -2] \cup [-1, 0]$ جدول تعين محاسبات	٧
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الف) $y = \sqrt{2 - \log_3(x-2)}$ $x > 2$ $\log_3(x-2) \leq 2$ $x - 2 \leq 9$ $2 \leq x \leq 11$ $D_f = (2, 11]$ ٢) ✓	ب) $y = \log(x^3 - x)$ $x(x^2 - 1) > 0$ $x(x-1)(x+1) > 0$ $\frac{-1 \ 0 \ 1}{-+ -+}$ $\frac{-1 \ 0 \ 0 \ 1}{\text{موجب سالب}}$ $\Rightarrow D_f = (-1, 0) \cup (1, +\infty)$	٨
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الف) $D_f = \mathbb{R}$ ب) $D_f = \mathbb{R} - \{0\} \rightarrow r^x \neq 1 \rightarrow x \neq 0$ ج) $r^x \neq r \rightarrow x \neq \log_r r \Rightarrow D_f = \mathbb{R} - \{\log_r r\}$ د) $r^x \neq r^2 \rightarrow x \neq \log_r r^2 \Rightarrow D_f = \mathbb{R} - \{\log_r r^2\}$ ٢) ✓	٩
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الف) $y = (x+1)!$ $x+1 \in \mathbb{N}$ $x \in \mathbb{N} - 1 \rightarrow x \in \frac{\mathbb{N}-1}{1}$ $D_f = \left\{ x \mid x = k - 1, k \in \mathbb{N} \right\}$	ب) $\left(\frac{x^2 - 1}{x^2 - 4} \right)! \in \mathbb{N}$ $-\frac{x^2 - 1}{x^2 - 4} \rightarrow \frac{x^2 - 1}{-x^2 + 4}$ $D_f = \left\{ x \mid x = \frac{4k - 1}{-x^2 + 4}, k \in \mathbb{N} \right\}$	١٠
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