

الف) $\sqrt{r \sin \theta - 1} \rightarrow r \sin \theta \geq 1 \rightarrow \sin \theta \geq \frac{1}{r}$  $D_f = \{k\pi + \pi\} - \{k\pi\}$

ب) $\frac{r}{r \sin^2 \theta - 1} \rightarrow r \sin^2 \theta - 1 \neq 0 \rightarrow r \sin^2 \theta \neq 1 \rightarrow \sin^2 \theta \neq \frac{1}{r} \rightarrow \sin \theta \neq \pm \sqrt{\frac{1}{r}}$
 (سوال 5) $D_f = \mathbb{R}$

الف) $\cos y = |x| - r$ $-1 \leq |x| - r \leq 1 \rightarrow r \leq |x| \leq r+1$
 $D_f = [-r, r]$

ب) $y = \arcsin(x^r + r^{n+1}) \rightarrow -1 \leq x^r + r^{n+1} \leq 1$
 $D_f = (-\infty, -r) \cup [-r, -1]$
 الف) $y = \sqrt{r - \log_r(x-r)}$ $\rightarrow x-r > 0 \rightarrow x > r$ $D_f = (r, 11]$
 $\rightarrow \log_r(x-r) \leq r \rightarrow x-r \leq r^r \Rightarrow x \leq 11$

ب) $\log(x^r - x) \rightarrow x^r - x > 0 \rightarrow x(x^{r-1} - 1) > 0$
 $D_f = (-\infty, -1) \cup (0, +\infty)$

الف) $y = \frac{r}{r^n + 1} \rightarrow r^n + 1 \neq 0 \rightarrow r^n \neq -1$ $D_f = \mathbb{R}$

ب) $y = \frac{r}{r^n - 1} \rightarrow r^n - 1 \neq 0 \rightarrow r^n \neq 1 \rightarrow x \neq 0$ $D_f = \mathbb{R} - \{0\}$

ج) $y = \frac{r}{r^n - r} \rightarrow r^n - r \neq 0 \rightarrow r^n \neq r \rightarrow r^{\frac{r}{n}} \neq r \rightarrow x \neq \frac{1}{r}$ $D_f = \mathbb{R} - \{\frac{1}{r}\}$

د) $y = \frac{r}{r^n - r^2} \rightarrow r^n - r^2 \neq 0 \rightarrow r^n \neq r^2 \rightarrow r^{\frac{r}{n}} \neq r^2$ $D_f = \mathbb{R}$

الف) $y = (x+1)! \rightarrow x+1 \in \mathbb{W} \rightarrow x \in \mathbb{W} - 1$
 $\rightarrow \{n | n \in \frac{\mathbb{W}-1}{r}, n \in \mathbb{W}\}$

ب) $y = \left(\frac{r^n - r}{r^n - \delta}\right)! \rightarrow \frac{r^n - r}{r^n - \delta} \in \mathbb{W} \rightarrow \frac{r^n - r}{r^n - \delta} \in \mathbb{W} \cdot \frac{\delta}{r^n - \delta}$
 $\rightarrow \{n | n \in \frac{-\delta W + r}{r - r W}, n \in \mathbb{W}\}$