

الف) $y = \sqrt{\frac{x^2 - 4x}{x^2 - x}} \rightarrow x(x-4) \geq 0$
 $\rightarrow x(x-1) \geq 0$
 $\rightarrow x \geq 1$
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$$-\frac{1}{3} + \frac{1}{3} + \frac{1}{3} - \frac{1}{3} + \frac{1}{3}$$

$$D_f = (-1, 0) \cup (0, 1) \cup [2, +\infty)$$

$$-\frac{1}{3} + \frac{1}{3} + \frac{1}{3} - \frac{1}{3} + \frac{1}{3}$$

$$D_f = \mathbb{R} - \{0, -1, 1\}$$

الف) $y = \frac{x+1}{\sqrt{x+|x|}} \rightarrow x+|x| > 0 \Rightarrow D_f = \mathbb{R}^+$

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الف) $y = \sqrt{x - [x]} \rightarrow x - [x] \geq 0 \rightarrow x \geq [x]$
 $\Rightarrow D_f = [x, +\infty)$

ب) $y = \frac{1}{\sqrt{x - [x]}} \rightarrow x - [x] > 0$
 $x \in [-1, 0] \Rightarrow -x$
 $x \in [0, 1] \Rightarrow x$
 $\Rightarrow D_f = \mathbb{R}^+$

الف) $y = \sqrt{[x - \frac{1}{p}] + [x + \frac{r}{p}]} \rightarrow [x - \frac{1}{p}] + [x + \frac{r}{p}] \geq 0$
 $\Rightarrow [0 - \frac{1}{p}] + [0 + \frac{r}{p}] \geq -1 - r$
 $\Rightarrow [-1 - \frac{1}{p}] + [1 + \frac{r}{p}] \geq [-\frac{1}{p}] + [\frac{r}{p}] = -r$

ب) $y = \sqrt{[x - \frac{1}{p}] + [x + \frac{1}{p}]} \rightarrow [x - \frac{1}{p}] + [x + \frac{1}{p}] \geq 0 \Rightarrow D_f = [x | \frac{x}{p} \in \mathbb{Q}, x \in \mathbb{W}]$

الف) $y = \frac{r}{\sin x - 1} \rightarrow \sin x \neq 1$

$$D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$$



ب) $y = \frac{r}{\sin^2 x - 1} \rightarrow \sin^2 x = 1 \rightarrow \sin x \neq \pm 1$

$$D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$$



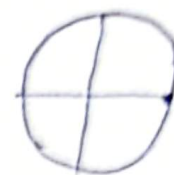
$$a) y = \sqrt{r \sin x - 1} \rightarrow r \sin x - 1 \geq 0 \rightarrow r \sin x \geq 1$$

$$\rightarrow \sin x \geq \frac{1}{r}$$

$$\Rightarrow D_f = \left[k\pi + \frac{\pi}{r}, r k\pi + \frac{\pi}{r}, r k\pi + \frac{\pi}{r}, r k\pi + \frac{\pi}{r}, r k\pi + \frac{\pi}{r}, r k\pi + \frac{\pi}{r} \right]$$

$$b) y = \sqrt{\cos x - 1} \rightarrow \cos x - 1 \geq 0 \rightarrow \cos x \geq 1$$

$$\Rightarrow D_f = [k\pi]$$



$$d) y = \cos y_2 (m-1)^r$$

$$-1 \leq m-1 \leq 1 \xrightarrow{+1} 0 \leq m \leq 2$$

$$\rightarrow D_f = [r, 2] \cup [-r, 0]$$

$$b) y = \arcsin(u^r + r u + 1)$$

$$\rightarrow \begin{cases} u^r + r u + 1 \geq -1 \rightarrow u^r + r u + 2 \geq 0 \rightarrow (u+1)(u+r+1) \geq 0 \text{ (I)} \\ u^r + r u + 1 \leq 1 \rightarrow u^r + r u \leq 0 \rightarrow u(u+r) \leq 0 \text{ (II)} \end{cases}$$

$$\text{II) } \frac{-r-1}{+1-1+} \text{ (II) } \frac{-r-0}{+1-1+} \rightarrow \bigcap$$

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

$$a) y = \sqrt{r - \log_p(m-r)} \rightarrow m-r > 0 \rightarrow m > r$$

$$\rightarrow r - \log_p(m-r) \geq 0 \rightarrow \log_p(m-r) \leq r \rightarrow m-r \leq p^r \rightarrow m \leq p^r + r$$

$$b) y = \log(m^r - m) \rightarrow m^r - m > 0 \rightarrow m(m^{r-1} - 1) > 0 \Rightarrow \frac{-1}{-1+1-1+} \rightarrow D_f = (-1, 0) \cup (1, +\infty)$$

$$a) y = \frac{r}{\varepsilon^m + 1} \rightarrow \varepsilon^m \neq -1 \rightarrow D_f = \mathbb{R}$$

$$b) y = \frac{r}{\varepsilon^m - 1} \rightarrow \varepsilon^m \neq 1 \rightarrow D_f = \mathbb{R} - \{0\}$$

$$c) y = \frac{r}{\varepsilon^m - r} \rightarrow \varepsilon^m \neq r \rightarrow x \neq \log_r \varepsilon \rightarrow D_f = \mathbb{R} - \{\log_r \varepsilon\}$$

$$d) y = \frac{r}{\varepsilon^m - r} \rightarrow \varepsilon^m \neq r \rightarrow x \neq \log_r \varepsilon \Rightarrow D_f = \mathbb{R} - \{\log_r \varepsilon\}$$

$$a) y = (k m + 1)! \quad \varepsilon m + 1 \in \mathbb{N} \rightarrow m \in \frac{\mathbb{N}-1}{r}$$

$$\rightarrow D_f = \left[n / n = \frac{k-1}{r}, k \in \mathbb{N} \right]$$

$$b) y = \left(\frac{r m - r}{r m - \omega} \right)! \rightarrow \frac{r m - r}{r m - \omega} \in \mathbb{N} \rightarrow r m - r \in r m \mathbb{N} - \omega \mathbb{N} \rightarrow r m - r m \mathbb{N} \in r - \omega \mathbb{N}$$

$$\rightarrow m = \frac{r - \omega \mathbb{N}}{r m - r m \mathbb{N}} \rightarrow D_f = \left\{ n / n = \frac{\omega k + r}{r k - \omega}, k \in \mathbb{N} \right\}$$