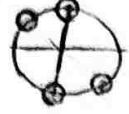


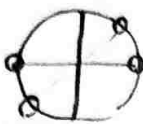
الف) $2\cos x + 1 \neq 0 \rightarrow \cos x \neq -\frac{1}{2} \rightarrow$  $\Rightarrow D_f = \mathbb{R} - \left\{2k\pi + \frac{2\pi}{3}\right\} \cup \left\{2k\pi + \frac{4\pi}{3}\right\}$

۲ ✓

ب) $\cos x - 1 \neq 0 \rightarrow \cos x \neq 1 \Rightarrow$  $\Rightarrow D_f = \mathbb{R} - \{2k\pi\}$

الف) $\tan x \neq -1$
 $\cos \neq 0$  $\Rightarrow D_f = \mathbb{R} - \left\{k\pi + \frac{\pi}{4}\right\} \cup \left\{k\pi - \frac{\pi}{4}\right\}$

۲

ب) $\cot x \neq 1$
 $\sin \neq 0$  $D_f = \mathbb{R} - \{k\pi\} \cup \left\{k\pi + \frac{\pi}{4}\right\}$

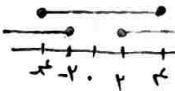
۲ ✓

الف) $-1 < x^2 - 2 < 1 \rightarrow 1 < x^2 < 3$ ① $1 < x < \sqrt{3}$
② $-1 > x > -\sqrt{3}$ $\Rightarrow D_f = [1, \sqrt{3}] \cup [-\sqrt{3}, -1]$

۲ ✓

ب) $-1 < \sqrt{x} - 3 < 1 \rightarrow 2 < \sqrt{x} < 4 \rightarrow 4 < x < 16 \rightarrow D_f = [4, 16]$

۳

الف) $-1 < |x| - 3 < 1 \Rightarrow 2 < |x| < 4$
 $|x| < 4 \rightarrow -4 < x < 4$ I
 $|x| > 2 \rightarrow x > 2$ II $x < -2$ III $\Rightarrow I \cap (II \cup III) \Rightarrow$  $\Rightarrow D_f = [-4, -2] \cup [2, 4]$

۲ ✓

ب) $-1 < x^2 + 3x + 1 < 1 \Rightarrow$
 $0 < x^2 + 3x + 2 \cdot \leq (x+1)(x+2)$ I $x^2 + 3x < 0 \rightarrow x(x+3) < 0$ II $\Rightarrow I \cap II \Rightarrow D_f =$
 $[-2, -1] \cup [0, \infty) \cap [-3, 0] = [-3, -1] \cup [0, 0] = [-3, -1]$

الف) $x^2 - 4 > 0 \rightarrow x^2 > 4 \rightarrow x > 2, x < -2 \Rightarrow (-\infty, -2) \cup (2, \infty) = D_f$

ب) $2 - |x| > 0 \rightarrow |x| < 2 \rightarrow -2 < x < 2 \rightarrow D_f = (-2, 2)$ ۲ ✓

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الف) $\delta - n > 0 \rightarrow \delta > n \rightarrow (-\infty, \delta)$
 $n - r > 0, n - r \neq 1 \rightarrow (r, \infty) - \{r\} \} \cap \rightarrow (r, \delta) - \{r\}$

ب) $(n-1)(n+1) > 0 \rightarrow \frac{-1}{2} < n < \frac{1}{2} \rightarrow (1, \infty) \cup (-\infty, -1) \mid D_f = (-1, 1) \cup (1, \infty) - \{1\}$
 $n + r > 0, n + r \neq 1 \Rightarrow n > -r, n \neq -r \rightarrow (-r, \infty) - \{-r\}$

الف) $\frac{(n-r)(n-1)}{n-r} > 0 \rightarrow \frac{n-1}{1} > 0 \rightarrow n > 1 \mid D_f = (1, \infty) \cup (r, \infty)$

ب) $-\frac{n+r}{n-r} > 0 \rightarrow \frac{n+r}{n-r} < 0 \rightarrow (-\infty, -r) \cup (r, \infty)$
 $n + \delta > 0, n + \delta \neq 1 \rightarrow n > -\delta, n \neq -r \Rightarrow (-\delta, \infty) - \{-r\}$
 $D_f = (-\delta, -r) \cup (r, \infty) - \{-r\}$

I) $n - r \geq 0 \rightarrow n \geq r$
 II) $r - \log_r^{n-r} > 0 \rightarrow \log_r^{n-r} < r \rightarrow n - r < r \rightarrow n < 2r$
 $\} I \cap II \Rightarrow D_f = (r, 2r]$

ب) I) $n > 0$
 $r \log_r^n - r > 0 \rightarrow \log_r^n > \frac{r}{r} \rightarrow n > \sqrt{r} \} \cap \rightarrow (\sqrt{r}, \infty) \mid D_f$

الف) $r^n \neq 1 \rightarrow$ حواصی این شرط هست $\rightarrow D_f = \mathbb{R}$

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

ج) $r^n \neq r \rightarrow r^{2n} \neq r^1 \rightarrow r^n \neq 1 \rightarrow n \neq \frac{1}{p} \Rightarrow D_f = \mathbb{R} - \{\frac{1}{p}\}$

د) $r^n \neq r^r \rightarrow n \neq \log_r^r \rightarrow D_f = \mathbb{R} - \{\log_r^r\}$

$r_{n+1} \in \mathbb{W} \rightarrow n \in \frac{\mathbb{W}-1}{r} \Rightarrow D_f = \{n/n \in \frac{\mathbb{K}-1}{r}, K \in \mathbb{W}\}$

$\frac{r^n - r}{r^n - \delta} \in \mathbb{W} \Rightarrow n \in -\frac{-\delta \mathbb{W} + r}{r \mathbb{W} - r} \Rightarrow D_f = \{n/n \in \frac{-\delta K + r}{r \mathbb{W} - r}, K \in \mathbb{W}\}$