

ناظم موزون

۲.

الف $\cos x \neq -\frac{1}{r}$



$\mathbb{R} = \left\{ k\pi + \frac{\pi}{r}, k\pi + \frac{2\pi}{r} \right\}$

ب ✓

ب $\cos x \neq 1$

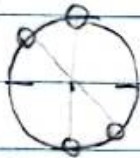


$\mathbb{R} = \{ 2k\pi \}$

الف $\cos x \neq -1$

$\mathbb{R} = \left\{ k\pi + \frac{\pi}{r}, k\pi + \frac{2\pi}{r} \right\}$

ب ✓



ب $\cos x \neq 0$

$\mathbb{R} = \{ k\pi, k\pi + \frac{\pi}{r} \}$

$\sin x \neq 0$



الف

$-\frac{1}{r} \leq x \leq \frac{1}{r}$

ب ✓

$-\frac{1}{r} \leq x \leq \frac{1}{r}$

$-\frac{1}{r} \leq x \leq \frac{1}{r}$

$\sqrt{1-x^2} \leq \sqrt{3} \Rightarrow [-\sqrt{3}, 1] \cup [1, \sqrt{3}]$

$-\frac{1}{r} \leq x \leq \frac{1}{r}$

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الف $1 \leq |x| \leq 3$

ب $1 \leq x^2 + 2x + 1 \leq 3$

$1 \leq |x| \leq 3$

$1 \leq x \leq 3$

$-3 \leq x \leq -1$

$x^2 + 2x + 1 \leq 3 \Rightarrow x^2 + 2x - 2 \leq 0$

$(x+1)(x+3) \leq 0 \Rightarrow x \in [-3, -1]$

$x^2 + 2x + 1 \geq 1 \Rightarrow x^2 + 2x \geq 0 \Rightarrow x(x+2) \geq 0$

$x \in (-\infty, -2] \cup [-1, \infty)$

$D = [-3, -1] \cup [1, 3]$

$[-3, -1] \cup [-1, 0]$

ب ✓

الف $x^2 - 4 > 0 \quad (x-2)(x+2) > 0 \quad D_f = (-\infty, -2) \cup (2, \infty) - \emptyset$

$\frac{-2}{+} \quad \frac{2}{-}$

ب $2 - |x| > 0$

$|x| < 2$

$-2 < x < 2 \quad D_f = (-2, 2)$

(2) ✓

الف $0 = x > 0 \quad x < 0 \quad x = 2 \quad x > 2 \quad x \neq 2 \quad D_f(2, \infty) = \{2\}$

ب $x^2 - 1 > 0 \quad (x-1)(x+1) > 0 \quad x+1 > 0 \quad -2 < x$

$\frac{-1}{+} \quad \frac{1}{-}$ $x \neq -2 \quad (-2, -1) \cup (1, \infty) = \{-2\}$

(2) ✓

الف $x^2 - 4x + 2 > 0 \quad (x-1)(x-2) > 0 \quad x \neq 2$

$\frac{1}{-} \quad \frac{2}{+}$

$D_f = (1, 2) \cup (2, \infty) = \{1\}$

(2) ✓

ب $\frac{x+2}{x-2} > 0 \quad \frac{-2}{+} \quad \frac{2}{-}$ $x+2 > 0 \quad x > 0$

$x \neq -2$

$D_f = (-2, -1) \cup (2, \infty) = \{-2\}$

-1

الف $\log_2(x-2) \leq 2 \quad x-2 \leq 2^2 \quad x \leq 6 \quad 2 < x$

$D_f = (2, 6]$

ب $2 \log_2 x - 1 > 0 \rightarrow \log_2 x > \frac{1}{2} \quad \frac{1}{\sqrt{2}} < x$

$0 < x \quad D_f = (\sqrt{2}, \infty)$

(2) ✓

الف) $\varepsilon^x \neq -1$ $D_f = \mathbb{R}$

ب) $\varepsilon^x \neq 1$ $x \neq 0$ $D_f = \mathbb{R} - \{0\}$

ج) $\varepsilon^x \neq 2$ $\log_{\varepsilon} 2 \neq x$ $D_f = \mathbb{R} - \{\log_{\varepsilon} 2\}$

د) $\varepsilon^x \neq 3$ $\log_{\varepsilon} 3 \neq x$ $D_f = \mathbb{R} - \{\log_{\varepsilon} 3\}$

الف) $\varepsilon^{k+1} \in W$ $k \in W - 1$ $\{k | k = \frac{k-1}{\varepsilon}, k \in W\}$

ب) $\frac{\varepsilon^k - \varepsilon}{\varepsilon - 1} \in W$ $\varepsilon^k - \varepsilon \in W(\varepsilon - 1)$

$\varepsilon^k - \varepsilon \in W(\varepsilon - 1)$

$\varepsilon^k - \varepsilon \in W(\varepsilon - 1)$

$D_f = \{k | k = \frac{\varepsilon^k - \varepsilon}{\varepsilon - 1}, k \in W\}$