

ناقصه صوری

الف $\cos x \neq -\frac{1}{r}$  $\mathbb{R} - \left\{ k\pi + \frac{\pi}{r}, k\pi + \frac{3\pi}{r} \right\}$

ب $\cos x \neq 1$  $\mathbb{R} - \{ k\pi \}$

الف $\cos x \neq -1$  $\mathbb{R} - \left\{ k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \right\}$

ب $\cos x \neq 0$  $\mathbb{R} - \{ k\pi, k\pi + \frac{\pi}{2} \}$

الف $\sin x \neq 0$  $\mathbb{R} - \{ k\pi \}$

ب $\sin x \neq 1$ $\mathbb{R} - \{ k\pi + \frac{\pi}{2} \}$

الف $1 \leq |x| \leq 3$ $\mathbb{R} - \{ x \mid 1 \leq |x| \leq 3 \}$

ب $1 \leq x^2 + 2x + 1 \leq 4$ $x^2 + 2x + 1 \leq 4 \Rightarrow x^2 + 2x - 3 \leq 0 \Rightarrow (x+3)(x-1) \leq 0 \Rightarrow x \in [-3, 1]$

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

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

ب $2 - |x| > 0$

$|x| < 2$

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

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

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

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

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

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

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

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

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

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 $2 \log_2 x - 1 > 0 \rightarrow \log_2 x > \frac{1}{2}$

$\frac{1}{2} < x$

$\sqrt{2} < x$

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

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

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

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

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

الف) $\varepsilon^{k+1} \in W \quad k \in W - 1 \quad \left\{x \mid x = \frac{k-1}{\varepsilon}, k \in W\right\} \cup 1.$

ب) $\frac{\varepsilon^x - \varepsilon}{\varepsilon^k - \varepsilon} \in W \quad \varepsilon^x - \varepsilon \in W(\varepsilon^k - \varepsilon)$
 $\varepsilon^x - \varepsilon \in W(\varepsilon^k - \varepsilon) = \varepsilon^k W - \varepsilon W$
 $\frac{\varepsilon^x - \varepsilon}{\varepsilon^k - \varepsilon} \in \frac{\varepsilon^k W - \varepsilon W}{\varepsilon^k - \varepsilon}$
 $D_f = \left\{x \mid x = \frac{\varepsilon^k - \varepsilon}{\varepsilon^k - \varepsilon}, k \in W\right\} = \{1\}$