

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره 9 کلاس: 9 الف

الف) $x^2 = 4x$
 $x = \{0, 4\}$
 $x^2 = x \Rightarrow x = \{\pm 1, 0\}$

$D_f = (-1, 0) \cup (0, 1) \cup [4, +\infty)$

$\checkmark$

ب) $I \rightarrow x^2 = x \Rightarrow x = \{\pm 1, 0\}$
 $II \rightarrow x^2 = x \Rightarrow x = \{\pm 1, 0\} \Rightarrow D_f = \mathbb{R} - \{\pm 1, 0\}$

الف) $\sqrt{x+|x|} \geq 0 \Rightarrow x \geq |x| \Rightarrow D_f = \mathbb{R}^+ \rightarrow (0, +\infty)$

ب) $\sqrt{|x|} > 0 \Rightarrow |x| > 0 \Rightarrow D_f = \mathbb{R}^+ \rightarrow (0, +\infty)$

الف) $2 - [x] \geq 0 \Rightarrow 2 \geq [x] \Rightarrow x < 2 \Rightarrow D_f = (-\infty, 2)$

ب) $2 - [x] > 0 \Rightarrow 2 > [x] \Rightarrow x < 2 \Rightarrow D_f = (-\infty, 2)$

الف) $[x - \frac{1}{2}] + [x + \frac{1}{2}] \geq 0 \Rightarrow [x + \frac{1}{2}] - 1 + [x + \frac{1}{2}] \geq 0$

$[x + \frac{1}{2}] \geq \frac{1}{2} \Rightarrow [x + \frac{1}{2}] \geq 1 \Rightarrow x \geq \frac{1}{2} \Rightarrow D_f = [\frac{1}{2}, +\infty)$

ب) $[x - \frac{1}{2}] + [\frac{1}{2} - x] \geq 0 \Rightarrow [n] + [-n] \geq 0 \Rightarrow n \rightarrow 0 \Rightarrow n = \{0\}$

$x - \frac{1}{2} \in \mathbb{Z} \Rightarrow x \in \mathbb{Z} + \frac{1}{2}$
 $x - \frac{1}{2} = -1 \Rightarrow x = -\frac{1}{2}$
 $x - \frac{1}{2} = 0 \Rightarrow x = \frac{1}{2}$
 $D_f = \{x \mid x = k + \frac{1}{2}, k \in \mathbb{Z}\}$

الف) $\sin x \neq 1 \Rightarrow D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{2} \mid k \in \mathbb{Z}\}$

ب) $\sin^2 x - 1 \neq 0 \Rightarrow \sin^2 x \neq \frac{1}{4} \Rightarrow \sin x \neq \pm \frac{1}{2} \Rightarrow D_f = \mathbb{R} - \{\frac{k\pi}{3} + \frac{\pi}{6} \mid k \in \mathbb{Z}\}$

ا) $|\sin n - 1| \geq 0 \Rightarrow \sin n \geq \frac{1}{2} \Rightarrow D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

ب) $\cos n - 1 \geq 0 \Rightarrow \cos n \geq 1 \Rightarrow \cos n = 1$

$D_f = \{2k\pi \mid k \in \mathbb{Z}\}$

صحيح ✓

ا) $-1 \leq \cos y \leq 1 \Rightarrow -1 \leq |n| - 2 \leq 1$

$2 \leq |n| \leq 3 \Rightarrow D_f = [-3, -2] \cup [2, 3]$

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ب) $-1 \leq \arcsin(x^2 + 2x + 1) \leq 1 \Rightarrow -1 \leq x^2 + 2x + 1 \leq 1$

$\Rightarrow 0 \leq (x+1)(x+2) \Rightarrow -x \geq -1 \leq x \leq 2$

$x^2 + 2x + 1 \leq 1 \Rightarrow x(x+2) \leq 0 \Rightarrow -2 \leq x \leq 0 \Rightarrow D_f = [-2, 0] \cup [0, 2]$

ا) $2 \geq \log_p(n-2) \Rightarrow n-2 > 0 \Rightarrow n > 2$

$\text{II } n-2 \leq 9 \Rightarrow n \leq 11 \Rightarrow D_f = (2, 11]$

ب) $x^2 - x > 0 \Rightarrow x(x-1) > 0$

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

صحيح ✓

ا) $x^n \neq -1 \Rightarrow D_f = \mathbb{R}$

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

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

صحيح ✓

د) $x^n \neq c \Rightarrow D_f = \mathbb{R} - \{\log \frac{c}{2}\}$

ا) $x_{n+1} \in \mathbb{W} \Rightarrow x_n \in \frac{\mathbb{W}-1}{2} \Rightarrow D_f = \{\frac{k-1}{2} \mid k \in \mathbb{W}\}$

ب) $\frac{c_{n-2}}{2n-5} \in \mathbb{W} \Rightarrow \frac{-5\mathbb{W}+2}{-2\mathbb{W}+2} = n \Rightarrow D_f = \{\frac{-5k+2}{-2k+2} \mid k \in \mathbb{W}\}$