

14,0

نام و نام خانوادگی: فریدون علیزاده پاسخنامه تشریحی تکلیف شماره کلاس: دوم دبیرستان

الف) $\sqrt{x-2} \rightarrow x-2 \geq 0 \rightarrow x \geq 2 \Rightarrow \{x \geq 2\} \Rightarrow (2, \infty)$
 $\hookrightarrow \sqrt{x-2} \geq 0 \rightarrow x \geq 2 \rightarrow 14 \geq x-2 \rightarrow x \leq 16 \Rightarrow [2, 16]$

ب) $\sqrt{x-2} \rightarrow x-2 \geq 0 \rightarrow x \geq 2 \Rightarrow \{x \geq 2\} \Rightarrow (2, \infty)$
 $\hookrightarrow \sqrt{x-2} \geq 0 \rightarrow x \geq 2 \rightarrow 9 \geq x-2 \rightarrow x \leq 11 \Rightarrow [2, 11]$

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 $Df = [-2, 2]$

ب) $\sqrt{x-2} \rightarrow x-2 \geq 0 \rightarrow x \geq 2 \Rightarrow \{x \geq 2\} \Rightarrow (2, \infty)$
 $Df = (-\infty, -2] \cup [2, \infty)$

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$$y = \sqrt{x}$$

$$x \geq 0$$

$$D_f = (-\infty, \infty) \checkmark$$

$$y = \frac{1}{\sqrt{x}}$$

$$x \geq 0, \sqrt{x} \neq 0$$

$$D_f = (-\infty, 1) \checkmark$$

(2)

$$y = \frac{1}{x}$$

$$D_f = \mathbb{R} - \{0\} \checkmark$$

$$y = \frac{1}{\sqrt{-x}}$$

$$D_f = \emptyset \checkmark$$

(2)

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

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

$$x \geq \frac{1}{2} \Rightarrow [x + \frac{1}{2}] \geq \frac{1}{2}$$

$$[x + \frac{1}{2}] \geq \frac{1}{2}$$

$$x + \frac{1}{2} \geq 1$$

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

$$D_f = [\frac{1}{2}, \infty) \checkmark$$

(2)

$$D_f = \{x = k \cdot \frac{1}{2} \mid k \in \mathbb{Z}\}$$

$$k + \frac{1}{2}$$

(1,0)

$$y = \frac{1}{\sin x - 1}$$

$$\sin x \neq \frac{1}{2}$$

$$D_f = (k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6})$$

$$D_f = \mathbb{R} - \{ \frac{k\pi}{2} + \frac{\pi}{6} \}$$

(2)

$$\cot x + 1$$

$$\tan x \neq -1$$

$$D_f = \mathbb{R} - \{ k\pi, k\pi + \frac{3\pi}{4} \}$$

$$\{ k\pi - \frac{\pi}{4} \}$$

$$\sqrt{1 - \cos x} - 1 \Rightarrow 1 - \cos x \geq 1 \Rightarrow \sin x \geq 0$$

$$D_f = [k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}]$$

(1)

$$\sqrt{1 - \cos x} \Rightarrow 1 - \cos x \geq 0 \Rightarrow 1 \geq \cos x$$

$$-1 \leq \cos x \Rightarrow D_f = [k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}]$$

$$1 - \cos x \geq 0$$

$$\cos x \leq 1$$

$$D_f = [k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}]$$