

نام و نام خانوادگی: محمد رحمان و سید ... پاسخنامه تشریحی تکلیف شماره ۴ ... کلاس: دهم B

$$g = \sqrt{\frac{x^r - 4x}{x^r - x}}$$

$$D_g = (-1, 1) \cup [4, +\infty) - \{0\}$$

$$\frac{x^r - 4x}{x^r - x} \geq 0$$

$$\frac{x(x-4)}{x(x-1)(x+1)} \geq 0$$

-1	0	1	4
+	+	+	-

(c) ✓

$$\begin{aligned} \text{c) } y &= \sqrt{\frac{x^6 - x^r}{x^r - x}} \\ \frac{x^6 - x^r}{x^r - x} &\geq 0 \quad \frac{x^r(x-1)(x+1)}{x(x-1)(x+1)} \\ \begin{array}{ccc} \star & \star & \star \\ -1 & 0 & 1 \end{array} & \quad \begin{array}{ccc} 1 & -1 & -1 \\ 1 & 1 & 1 \end{array} \\ \hline + & + + + \end{aligned}$$

$$g = \frac{x+1}{\sqrt{x+|x|}}$$

$\neg) y = \frac{1}{\sqrt{x|x|}}$
 $x|x| > 0$
 $\ominus \rightarrow X$
 $\odot \rightarrow X$
 $\oplus \rightarrow \checkmark$
 $D_f = (0, +\infty)$

$$y = \sqrt{r - [x]}$$

$$r - [x] \geq 0$$

$$[x] \leq r$$

$$x \leq r$$

$$D_f = (-\infty, r]$$

$$(-\infty, r]$$

$$1, 5$$

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

$$\begin{aligned} \text{(الف)} \quad y &= \left[x - \frac{1}{y} \right] + \left[x + \frac{y}{y} \right] \quad \left[x + \frac{y}{y} \right] \geq \frac{1}{y} \\ \left[x - \frac{1}{y} \right] + \left[x + \frac{y}{y} \right] &\geq 0 \quad x + \frac{y}{y} \geq \frac{1}{y} \\ x &\geq \frac{1}{y} \\ \left[x - 1 + \frac{y}{y} \right] + \left[x + \frac{y}{y} \right] &\geq 0 \quad D_f = \left[\frac{1}{y}, +\infty \right) \\ \left[x + \frac{y}{y} \right] \times y - 1 &\geq 0 \end{aligned}$$

$$\sqrt{\left[x - \frac{1}{p}\right] + \left[-x + \frac{1}{p}\right]} \rightarrow x - \frac{1}{p} \in \mathbb{Z}$$

$$\left[x - \frac{1}{p}\right] + \left[-x + \frac{1}{p}\right] \geq 0 \quad \text{Def} = \left\{x \mid x = k + \frac{1}{p}, k \in \mathbb{Z}\right\}$$

$$\left[x - \frac{1}{p}\right] + \left[-\left(x - \frac{1}{p}\right)\right] \geq 0$$

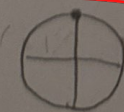
$$[m] + [-m] \geq 0 \quad \begin{cases} m \in \mathbb{Z} \Rightarrow [m] + [-m] = 0 \\ m \notin \mathbb{Z} \Rightarrow [m] + [-m] = -1 \end{cases}$$

الف) $q = \frac{r}{\sin \chi - 1}$

$\sin \chi - 1 \neq 0$

$\sin \chi \neq 1$

$D_f = \mathbb{R} - \left\{ r \left(\frac{\pi}{2} + \frac{\pi}{r} \right) \right\} = [-1, 1]$



$$y = \frac{r}{r \sin \chi - 1}$$

$$r \sin \chi - 1 \neq 0$$

$$\sin \chi \neq \frac{1}{r}$$

$$\sin \chi \neq \frac{\sqrt{r}}{r}$$

$$Df = R - \left\{ r k \pi + \frac{\pi}{2}, r k \pi + \frac{3\pi}{2} \right\}$$

$$f \left(k\pi \pm \frac{\pi}{2} \right)$$

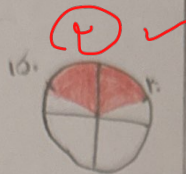
$$الف) y = \sqrt{r \sin x - 1}$$

$$r \sin x - 1 \geq 0$$

$$r \sin x \geq 1$$

$$\sin x \geq \frac{1}{r}$$

$$D_f = \left[r k \pi + \frac{\pi}{6}, r k \pi + \frac{5\pi}{6} \right]$$

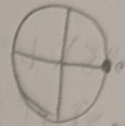


$$ب) y = \sqrt{\cos x - 1}$$

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

$$\cos x \geq 1$$

$$D_f = \{r k \pi\}$$



6

$$الف) \cos y = |x| - r$$

$$-1 \leq |x| - r \leq 1$$

$$r \leq |x| \leq r+1$$

$$r \leq x \leq r+1$$

$$D_f = [-r-1, -r] \cup [r, r+1]$$

7

$$ب) y = a r \sin(x + r x + 1)$$

$$\Rightarrow -1 \leq x + r x + 1 \leq 1$$

$$\begin{cases} x + r x + 1 \geq 0 \Rightarrow (x+r)(x+1) \geq 0 \Rightarrow (-\infty, -1] \cup [1, +\infty) \text{ I} \\ x + r x + 1 \leq 0 \Rightarrow x(x+r) \leq 0 \Rightarrow \frac{-r}{1} \leq x \leq 0 \Rightarrow [-r, 0] \text{ II} \end{cases}$$

$$\Rightarrow D_f = [-r, -1] \cup [1, 0]$$

7

$$الف) y = \sqrt{x - \log_r(x-r)}$$

$$x-r > 0 \Rightarrow x > r$$

$$x - \log_r(x-r) \geq 0 \Rightarrow \log_r(x-r) \leq x \Rightarrow (x-r) \leq r^x \Rightarrow x \leq 1$$

$$\Rightarrow r \leq x \leq 1 \Rightarrow D_f = (r, 1]$$

8

$$ب) y = \log(x^r - x)$$

$$x^r - x > 0 \Rightarrow x(x-1)(x+1) > 0$$

$$\frac{-1}{-1} < \frac{0}{0} < \frac{1}{1}$$

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

8

$$الف) y = \frac{r}{r^x + 1}$$

$$r^x + 1 \neq 0 \Rightarrow r^x \neq -1 \Rightarrow D_f = \mathbb{R}$$

$$ب) y = \frac{r}{r^x - 1}$$

$$r^x - 1 \neq 0 \Rightarrow r^x \neq 1 \Rightarrow x \neq 0$$

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

9

$$ج) y = \frac{r}{r^x - r}$$

$$r^x - r \neq 0 \Rightarrow r^x \neq r \Rightarrow D_f = \mathbb{R} - \{\log_r r\}$$

$$د) y = \frac{r}{r^x - r}$$

$$r^x - r \neq 0 \Rightarrow r^x \neq r \Rightarrow D_f = \mathbb{R} - \{\log_r r\}$$

$$الف) y = (r(x+1))!$$

$$r(x+1) \in \mathbb{W} \Rightarrow rx \in \mathbb{W} - 1 \Rightarrow x \in \frac{\mathbb{W} - 1}{r}$$

$$D_f = \left\{ x \mid x \in \frac{\mathbb{W} - 1}{r}, k \in \mathbb{W} \right\}$$

1, 10, 6

$$ب) y = \left(\frac{r(x-r)}{r^x - r} \right)!$$

$$\frac{r(x-r)}{r^x - r} \in \mathbb{W} \Rightarrow r(x-r) \in r^x - r \Rightarrow r(x-r) \in r^x - r$$

$$\Rightarrow r(x-r) \in r^x - r \Rightarrow x(r-r) \in r^x - r \Rightarrow x(r-r) \in r^x - r$$

$$x \in \frac{r - r^x}{r - r}$$

$$D_f = \left\{ x \mid x \in \frac{r - r^x}{r - r}, k \in \mathbb{W} \right\}$$

10