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نظاره منبر

$$الف) y = \sqrt{4-x} \quad 4-x \geq 0 \quad 4-\sqrt{4-x} \geq 0$$

$$D_f = [-4, 4]$$

$$x \leq 4$$

$$4 \geq 4-x$$

$$-4 \leq x \leq 4$$

$$x \geq -4$$

$$ب) y = \sqrt{4-x} \quad x-2 \geq 0 \quad 4-\sqrt{x-2} \geq 0$$

$$D_f = [2, 11]$$

$$x \geq 2$$

$$4 \geq x-2$$

$$2 \leq x \leq 11$$

$$11 \geq x$$

$$ج) y = \sqrt{4-2x^2} \quad 4-2x^2 \geq 0$$

$$D_f = [-\sqrt{2}, \sqrt{2}]$$

$$x^2 \leq 2 \Rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$$

$$د) y = \sqrt{4|x|-9} \quad 4|x|-9 \geq 0$$

$$D_f = (-\infty, -\frac{9}{4}] \cup [\frac{9}{4}, +\infty) \quad |x| \geq \frac{9}{4} \Rightarrow \frac{9}{4} \leq x \quad x \leq -\frac{9}{4}$$

$$الف) y = \sqrt{\frac{|x|+1}{|x|-4}}$$

$$|x|-4 \neq 0$$

$$D_f = \mathbb{R} - \{\pm 4\}$$

$$|x| \neq 4 \Rightarrow x \neq \pm 4$$

$$ب) y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-4}}$$

$$\sqrt{x}-4 \neq 0$$

$$D_f = [0, +\infty) - \{4\}$$

$$\sqrt{x} \neq 4 \Rightarrow x \neq 16, x \geq 0$$

$$الف) y = \frac{\sqrt{4-|x|}}{|x|+2}$$

$$4-|x| \geq 0$$

$$|x|+2 \neq 0$$

$$D_f = [-4, 4]$$

$$|x| \leq 4 \Rightarrow -4 \leq x \leq 4$$

$$|x| \neq -2$$

$$|x| \neq -2$$

$$ب) y = \frac{\sqrt{4-x^2}}{|x|-1}$$

$$4-x^2 \geq 0$$

$$|x|-1 \neq 0$$

$$D_f = [-2, 2] - \{\pm 1\}$$

$$x^2 \leq 4$$

$$-2 \leq x \leq 2$$

$$|x| \neq 1 \Rightarrow x \neq \pm 1$$

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تکانه و مشتق

$$\text{الف) } y = \frac{x+1}{\sqrt{x+|x|}}$$

$$x+|x| > 0$$

$$D_f = (0, +\infty)$$

$$|x| > -x$$

$$0 < x$$

$$\text{ب) } y = \frac{1}{\sqrt{x|x|}}$$

$$x|x| > 0$$

$$D_f = (0, +\infty)$$

$$\text{الف) } y = \sqrt{1-x}$$

$$1-x \geq 0$$

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

$$x \leq 1$$

$$\text{ب) } y = \frac{1}{\sqrt{1-x}}$$

$$1-x > 0$$

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

$$x < 1$$

$$\text{الف) } y = \frac{1}{x[x]}$$

$$x[x] \neq 0$$

$$D_f = \mathbb{R} - [0, 1)$$

$$\text{ب) } y = \frac{1}{\sqrt{-x[x]}}$$

$$-x[x] > 0$$

$$D_f = \emptyset$$

$$\text{الف) } y = \sqrt{\left[x-\frac{1}{x}\right] + \left[x+\frac{1}{x}\right]}$$

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

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

$$D_f = \left[\frac{1}{2}, +\infty\right)$$

$$\left[x+\frac{1}{x}\right] \geq 1$$

$$\left[x+\frac{1}{x}\right] \geq \frac{1}{x}$$

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

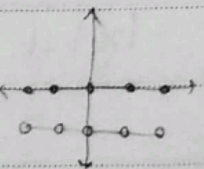
$$\text{ب) } y = \sqrt{\left[x-\frac{1}{x}\right] + \left[-x+\frac{1}{x}\right]}$$

$$\{a\} + \{-a\} = \{0, a \in \mathbb{Z}\}$$

$$x - \frac{1}{x} \in \mathbb{Z}$$

$$x \in \mathbb{Z} + \frac{1}{x}$$

$$D_f = \left\{x \mid x \in k + \frac{1}{x}, k \in \mathbb{Z}\right\}$$



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الزاوية

$$الف) y = \frac{1}{r \sin^2 \pi - 1}$$

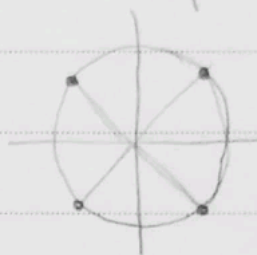
$$r \sin^2 \pi - 1 \neq 0$$

$$\sin^2 \pi \neq \frac{1}{r}$$

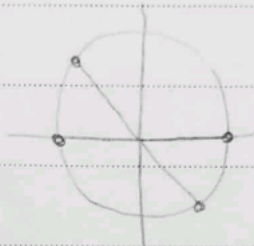
$$\sin \pi \neq \pm \frac{\sqrt{r}}{r}$$

$$D_f = R - \left\{ k\pi + \frac{\pi}{r} \right\}$$

$$D_f = R - \left\{ k\pi - \frac{\pi}{r} \right\}$$



$$ب) \frac{\cot \pi + 1}{\tan \pi + 1} \neq 0 \rightarrow \tan \pi \neq -1$$



$$D_f = R - \left\{ k\pi, k\pi - \frac{\pi}{r} \right\}$$

$$الف) y = \sqrt{r \sin \pi - 1}$$

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

$$r \sin \pi \geq 1 \rightarrow \sin \pi \geq \frac{1}{r}$$

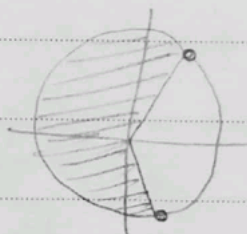


$$D_f = \left[r k \pi + \frac{\pi}{r}, r k \pi - \frac{\pi}{r} \right]$$

$$ب) y = \sqrt{1 - r \cos \pi}$$

$$1 - r \cos \pi \geq 0$$

$$\cos \pi \leq \frac{1}{r}$$



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