

$$\frac{p}{z^n - 1} \quad z^n - 1 \neq 0 \quad R - \{0\}$$

(p) ✓

$$\frac{p}{z^n - 1} \quad z^n - 1 \neq 0 \rightarrow z^n \neq 1 \quad R - \{1\}$$

$$\frac{p}{z^n - 1} \quad z^n - 1 \neq 0 \quad z^n \neq 1 \rightarrow n \neq \log_z(p)$$

$$R - \{\log_z(p)\}$$

$$y = (z^{n+1})! \quad z^{n+1} = k \quad z^n = k-1 \rightarrow n = k-1$$

$$y = \left(\frac{p^n - 1}{p^n - 1} \right)! \quad \frac{p^n - 1}{p^n - 1} = k \quad p^n - 1 = k(p^n - 1) \rightarrow p^n - 1 = p^{kn}$$

(p) ✓

$$n(p - pk) = p - \omega k \rightarrow a = \frac{p - \omega k}{p - pk}$$

k ≠ 0
k ∈ W

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

$$\sin x - 1 \neq 0 \rightarrow \sin x \neq 1 \rightarrow x \neq 2k\pi + \frac{\pi}{2} \rightarrow \mathbb{R} - \left\{ 2k\pi + \frac{\pi}{2} \right\}$$

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

$$r \sin x - 1 \neq 0 \rightarrow \sin x \neq \pm \frac{1}{r} \rightarrow \mathbb{R} - \left\{ \frac{k\pi}{r} + \frac{\pi}{2} \right\}$$

$$\sqrt{r \sin x - 1} \rightarrow r \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{r}$$

$$\left[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4} \right]$$

$$\sqrt{\cos x - 1} \rightarrow \cos x \geq 1 \quad x = 2k\pi$$

$$\cos y = |x| - r \rightarrow -1 \leq |x| - r < 1 \rightarrow r < |x| \leq r+1$$

$$x \in [-r-1, -r] \cup [r, r+1]$$

$$y = \arcsin(x^r + rx + 1) \quad x^r + rx + 1 \geq -1 \rightarrow (x+r)(x+1) \geq 0$$

$$x \in (-\infty, -r] \cup [-1, +\infty)$$

$$y = \sqrt{r - \log_p(x-r)} \rightarrow x-r > 0 \rightarrow x > r$$

$$r - \log_p(x-r) \geq 0 \rightarrow \log_p(x-r) \leq r \rightarrow x-r \leq r \rightarrow x \leq 2r$$

$$y = \log(x^r - x) \rightarrow x^r - x > 0 \rightarrow x(x-1)(x+1) > 0$$

$$x \in (-1, 0) \cup (1, +\infty)$$

$$y = \frac{r}{x^r + 1} \quad x^r + 1 \neq 0 \rightarrow \mathbb{R}$$

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Subject: _____

$$y = \frac{\sqrt{x^2 - 4x}}{\sqrt{x^2 - x}}$$

$$x^2 - 4x \geq 0 \rightarrow x(x-4) \geq 0 \quad x \in (-\infty, 0] \cup [4, +\infty)$$

$$x^2 - x > 0 \rightarrow x(x-1) > 0$$

$$(x+1)(x-1) \quad (-1, 0) \cup (1, +\infty)$$

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

$$y = \frac{\sqrt{x^3 - x}}{\sqrt{x^2 - x}}$$

$$x^3(x^2-1) \rightarrow x^3(x-1)(x+1) \geq 0$$

-	0	1	+	+
+	+	-	-	+
-	+	-	+	+

$$x(x-1)(x+1) > 0 \quad \mathbb{R}$$

پایین صفت بخون

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

$$x+|x| > 0$$

$$x-x > 0 \times \quad x+x > 0 \quad (0, +\infty)$$

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

$$x|x| > 0$$

$$(0, \infty)$$

$$y = \sqrt{2-[x]} \rightarrow 2-[x] \geq 0 \rightarrow [x] \leq 2 \quad x < 3 \quad (-\infty, 3)$$

$$y = \frac{1}{\sqrt{2-[x]}} \rightarrow 2-[x] > 0 \rightarrow [x] < 2 \quad (-\infty, 2)$$

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

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

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

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

$$([x], [-x]) \quad \text{if } x \in \mathbb{Z} \rightarrow [x] + [-x] = 0$$

$$\rightarrow x \notin \mathbb{Z} \quad [x] + [-x] = -1$$

PAKAN

→ $\frac{-1 \quad * 0 \quad 1 \quad 4}{- \frac{1}{2} + \frac{1}{2} + \frac{1}{2} - \frac{1}{2} +}$ $D_y = (-1, 0) \cup (0, 1) \cup [4, +\infty)$ (الف) -1

→ $\frac{* -1 \quad * 0 \quad * 1}{+ \frac{1}{2} + \frac{1}{2} + \frac{1}{2} +}$ $D_y = \mathbb{R} - \{-1, 0, 1\}$ (ب)