

الف) $f(x) = x^3$

1A, 2

→ $P_f(x)$ 

2.) $f(x-1)$ 

2) $f(x)$

$$\text{الف) } x^r - \overset{*}{\omega} x + \overset{x}{y} > 0 \quad (m^r - r)(m^{r''} - r'') \quad \frac{r}{+ \phi} - \frac{r''}{\phi +} -$$

$$(-\infty, r) \cup (r', +\infty)$$

ب) $x^2 - (x + \omega) < 0$ $(x - 1)(x - \omega) < 0$

(1, w)

8.) $x^2 + 4x + 4 \geq 0 \rightarrow (x+1)(x+4) \geq 0$

$$(-\infty, -\omega] \cup [-1, +\infty)$$

$$15 \rightarrow) x^2 - 4x + 4 \leq 0 \quad (x-1)^4 \leq 0 \quad \frac{1}{x-1} - \frac{4}{x-1}$$

$[1, 4]$

$$\text{الف) } \frac{n^2 - 4n + 2}{n - 2} < 0 \quad \frac{(n-1)(n-2)}{n-2} \quad \frac{1}{-1} + \frac{2}{+1} - \frac{2}{-1} = 1$$

$$(-\infty, 1) \cup (4, \infty)$$

$$b) \frac{x^4 - 1}{x^4 - 4x + 4} \geq 0 \quad \frac{(x-1)(x+1)}{(x-1)(x-2)} \quad \frac{-1}{+1} - \frac{-1}{+1} + \frac{-1}{+1} + \frac{-1}{+1}$$

$$(-\infty, -1] \cup [1, \infty)$$



Senobar.

$+ \text{q} - \text{\$} - \text{\$} +$

$$(-\infty, -1] \cup (6, +\infty)$$

$$y = \sqrt{\frac{x^4 - 1}{x^3 - x}} \geq 0 \quad \frac{x^4 - 1}{x^3 - x} \geq 0 \quad \frac{(x-1)(x^3 + x + 1)}{x(x-1)(x+1)}$$

$$\frac{-1 \quad 0 \quad 1}{+ \quad - \quad +} \quad D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$$

$$b) y = \sqrt{\frac{x^2 - 14}{x^2 - 5x + 6}} \geq 0 \quad \frac{x^2 - 14}{x^2 - 5x + 6} \geq 0 \quad \frac{(x-4)(x+4)}{(x-1)(x-6)}$$

$$\frac{-4 \quad 1 \quad 6}{+ \quad - \quad +} \quad (-\infty, -4] \cup (1, 6) \cup (6, +\infty)$$

$$c) y = \sqrt{4 - \sqrt{2 - x}} \quad 2 - x \geq 0, \quad x \leq 2 \quad -\infty$$

$$4 - \sqrt{2 - x} \geq 0 \quad \sqrt{2 - x} \leq 4 \rightarrow 2 - x \leq 14$$

$$\rightarrow -x \leq 12 \rightarrow x \geq -12$$

$$D_f = [-12, 2]$$

Ⓟ ✓

$$b) y = \sqrt{13 - \sqrt{x - 2}} \quad x - 2 \geq 0 \rightarrow x \geq 2$$

$$13 - \sqrt{x - 2} \geq 0 \rightarrow \sqrt{x - 2} \leq 13, \quad x - 2 \leq 4 \quad x \leq 11$$

$$D_f = [2, 11]$$

الف) $y = \sqrt{8 - 2x^2}$ $8 - 2x^2 \geq 0$ $2x^2 \leq 8 \rightarrow x^2 \leq 4$ -4

$-\sqrt{4} \leq x \leq \sqrt{4}$

$D_f = [-2, 2]$

(2) ✓

ب) $y = \sqrt{3|x| - 9}$ $3|x| - 9 \geq 0 \rightarrow 3|x| \geq 9$

$|x| \geq 3$ $x \leq -3$ 1

$x \geq 3$

$D_f = (-\infty, -3] \cup [3, +\infty)$

الف) $y = 3 \sqrt{\frac{|x|+1}{|x|-3}}$ $|x| - 3 \neq 0$ $|x| \neq 3$ -6

$x \neq \pm 3$ $D_f = \mathbb{R} - \{-3, 3\}$

(2) ✓

ب) $y = 3 \sqrt{\frac{\sqrt{|x|}+1}{\sqrt{|x|}-3}}$ $x \geq 0$, $\sqrt{x} - 3 \neq 0 \rightarrow \sqrt{x} \neq 3$

$x \neq 9$ $D_f = [0, 9) \cup (9, +\infty)$



$$w) y = \frac{\sin n}{r \cos n - 1} \rightarrow r \cos n - 1 \neq 0 \quad - \Delta$$

$$r \cos n \neq 1 \rightarrow \cos n \neq \frac{1}{r}$$

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

l/rb

$$1) y = \frac{\cos n + 1}{r \sin n + 1} \quad r \sin n + 1 \neq 0 \rightarrow r \sin n \neq -1$$

$$\sin n \neq -\frac{1}{r} \quad D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{r}, k\pi + \frac{3\pi}{r} \right\}$$

$$2) y = \frac{\tan n + r}{\cot n - 1} \quad \cot n - 1 \neq 0 \rightarrow \cot n \neq 1$$

$$\rightarrow \frac{\cos n}{\sin n} \rightarrow \sin n \neq 0 \quad \hookrightarrow \frac{\cos n}{\sin n} \neq 1$$

$$D_f = \mathbb{R} - \left[\{ k\pi \} \cup \left\{ k\pi + \frac{\pi}{r} \right\} \cup \left\{ k\pi + \frac{3\pi}{r} \right\} \right]$$

$$3) y = \frac{\sin n + 1}{\varepsilon \sin^2 n - \mu} \quad \varepsilon \sin^2 n - \mu \neq 0 \quad \& \sin^2 n \neq \mu$$

$$\sin^2 n \neq \frac{\mu}{\varepsilon} \quad D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{\varepsilon}, k\pi + \frac{3\pi}{\varepsilon} \right\}$$

$$y = \frac{1}{\sqrt{|x-y|} - \frac{1}{r}} \rightarrow |x-y| - \frac{1}{r} > 0 \quad |x-y| > \frac{1}{r} \quad - \Delta$$

$$|x-y| > \frac{1}{\varepsilon} \rightarrow x-y > \pm \frac{1}{\varepsilon} \quad D_f = (-\infty, \frac{1}{\varepsilon}) \cup (\frac{1}{\varepsilon}, +\infty)$$

$$x > \frac{1}{\varepsilon}, \quad x < \frac{1}{\varepsilon}$$

⊕ ✓

Vencha

SUBJECT

Year: Month: Day:)

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1) $y_2 = \sqrt{z - x|m|}$ $z - x|m| \geq 0$ $x|m| \leq z$ $-1 \leq$

2) $|m| \leq r \rightarrow -r \leq m \leq r$ $D_f = [-r, r]$

3) $y = \int \frac{|m|}{|m|} \rightarrow -|m| \leq 0, \quad m \neq 0$ (D) ✓

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