

الف (د) $\left[x - \frac{1}{\sqrt{3}} \right] + \left[x + \frac{2}{\sqrt{3}} \right] \geq 0$ (ب)

$\underbrace{\left[x - \frac{1}{\sqrt{3}} \right]}_a + \underbrace{\left[-\left(x - \frac{1}{\sqrt{3}} \right) \right]}_b$

$\begin{cases} a \in \mathbb{Z} \rightarrow 0 \\ a \notin \mathbb{Z} \rightarrow -1 \end{cases}$

$x - \frac{1}{\sqrt{3}} \in \mathbb{Z}$
 $x \in \mathbb{Z} + \frac{1}{\sqrt{3}}$

$D_f = \left\{ x \mid x = k + \frac{1}{\sqrt{3}}, k \in \mathbb{Z} \right\}$

$x + \frac{2}{\sqrt{3}} - 1 \Rightarrow \left[x + \frac{2}{\sqrt{3}} \right] - 1 + \left[x + \frac{2}{\sqrt{3}} \right] \geq 0$

$2 \left[x + \frac{2}{\sqrt{3}} \right] \geq 1 \rightarrow \left[x + \frac{2}{\sqrt{3}} \right] \geq \frac{1}{2}$

$x + \frac{2}{\sqrt{3}} \geq 1 \rightarrow x \geq \frac{1}{\sqrt{3}}$

$D_f = \left[\frac{1}{\sqrt{3}}, +\infty \right)$

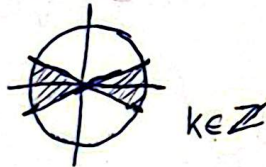
$y = \sqrt{1 - f \sin^2 x} \geq 0$

$1 \geq f \sin^2 x$

$\sin^2 x \leq \frac{1}{f}$

$|\sin x| \leq \frac{1}{\sqrt{f}}$

$D_f = \left[k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right]$



$y = \frac{\cot x + 1}{\tan x + 1} \neq 0$

$\sin x \neq 0$

$x \neq k\pi$

$\cos x \neq 0$

$x \neq k\pi + \frac{\pi}{2}$

$\tan x \neq -1 \quad x \neq k\pi - \frac{\pi}{4}$

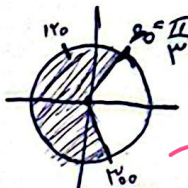
$D_f = \mathbb{R} - \left\{ k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{4} \right\}$

$y = \sqrt{1 - 2 \cos x} \geq 0$

$2 \cos x \leq 1$

$\cos x \leq \frac{1}{2}$

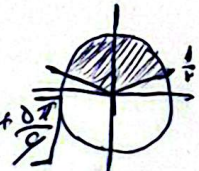
$D_f = \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$



$y = \sqrt{2 \sin x - 1} \geq 0$

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

$D_f = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$



$\cos y = \sqrt{5 - 2x} \geq 0$

$-1 \leq \sqrt{5 - 2x} \leq 1$

$5 - 2x \leq 1$

$4 \leq 2x$

$[2, +\infty) \leftarrow x \geq 2$

$2x \leq 5$

$x \leq \frac{5}{2}$

$D_f = \left[2, \frac{5}{2} \right]$

$-1 \leq x^2 + 3x + 1 \leq 1$

$x^2 + 3x + 1 \geq -1$

$x^2 + 3x + 2 \geq 0$

$(x+1)(x+2) \geq 0$

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

$x \geq -1 \quad \vee \quad x \leq -2$

$D_f = [-2, -1] \cup [-1, 0]$

$x^2 + 3x + 1 \leq 1$

$x^2 + 3x \leq 0$

$x(x+3) \leq 0$

$\frac{-3}{+} \frac{0}{-}$

$-3 \leq x \leq 0$

آترسیا ہفما صالہ

$$1 - \log_p^x > 0 \quad x > 0$$

(9) الف

$$\log_p^x < 1 \rightarrow x < p$$

$$D_f = (0, p)$$

$$1 - \log_{\frac{1}{p}}^x > 0 \quad x > 0 \textcircled{1}$$

(ب)

$$D_f = \left(\frac{1}{p}, +\infty\right)$$

$$\log_{\frac{1}{p}}^x < 1 \rightarrow x > \frac{1}{p} \textcircled{2}$$

$$\frac{0}{0}$$

$$p^{px-x^p} - 1 \geq 0 \quad \log_p^{p^{px-x^p}} \geq \log_p^1 \text{ (الف) } \textcircled{10}$$

$$p^{px-x^p} \geq 1$$

$$\log_p^{p^{px-x^p}} \geq \log_p^1$$

$$p^{px-x^p} \geq p$$

$$-(x^p - px + p) \geq 0$$

$$-\frac{1}{p} + \frac{p}{p} =$$

$$-(x-1)(x-p) \geq 0$$

$$[1, p]$$

(ب)

$$\frac{px+d}{px+p} \in W \xrightarrow{\text{بیلزنی}} \frac{pw-d}{-pw+p}$$

(ب)

$$D_f = \left\{ x \mid x \in \frac{pk-d}{-pk+p}, k \in W \right\}$$

SEVIL

تكليف (٣)

آثر بسا آفا صا

$$\frac{x+3}{(2x^2+17x+12)(x+1)}$$

$$x^2+17x+12 = (x+1)(x+6)$$

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

$$x = \frac{6}{1} = 6$$

$$D_f = \mathbb{R} - \left\{ -1, -\frac{1}{2}, 6 \right\}$$

$$(1) \text{ الف } \frac{x+3}{(x-1)(x^2+8x-3)} \rightarrow \frac{1}{x-1}, -3$$

$$\Delta = b^2 - 4ac = 64 - 4(-1)(-3) = 64 - 12 = 52 > 0$$

$$x^2+8x-3 = (x+6)(x-1) \rightarrow x = \frac{1}{2}, x = -6 = -3$$

$$D_f = \mathbb{R} - \left\{ -3, \frac{1}{2}, 1 \right\}$$

$$\sqrt{\frac{x+3}{(x^2-x+1)(x-1)}} \geq 0$$

$$D_f = (-\infty, -3] \cup (1, +\infty)$$

$$(2) \text{ الف } \frac{x+3}{(x^2-x+1)(x-1)} \Delta = 1 - 4(1) = -3 < 0 \rightarrow D_f = \mathbb{R} - \{1\}$$

$$\frac{2}{x^2-d|x-1|-2x+d} \neq 0$$

$$(3) \frac{x^2-dx-2x+d+d}{x^2-17x+10} = (x-2)(x-d) \rightarrow D_f = \mathbb{R} - \{2, d\}$$

$$(4) \frac{x^2-d+dx-2x+d}{x^2+17x} = \frac{x(x+3)}{x(x+17)} \rightarrow D_f = \mathbb{R} - \{-3, 0\}$$

$$\frac{8x^2+6}{[x]^2-2[x]-3} \neq 0$$

$$t = [x]$$

$$t^2-2t-3=0$$

$$a+b=c \rightarrow t = -1, t = -\frac{c}{a} = 3$$

$$D_f = \mathbb{R} - [-1, 3] \cup [3, 10]$$

$$(5) \text{ الف } y = \sqrt{-x} - 2 \geq 0$$

$$[-x] \geq +2 \rightarrow D_f = (-\infty, -2]$$