

19, 20

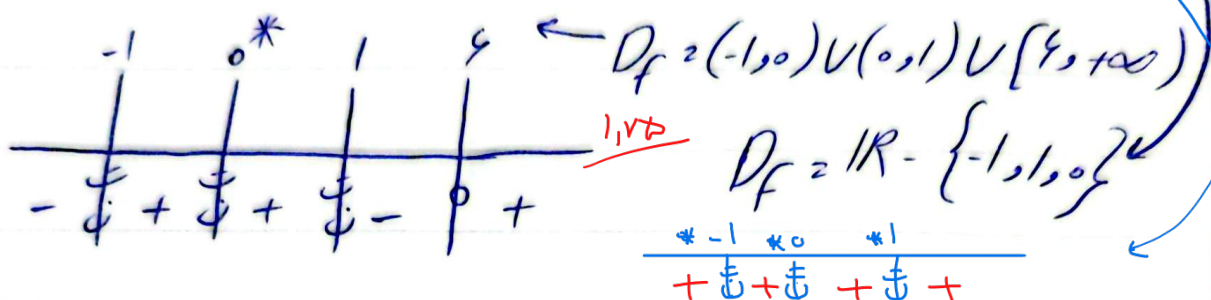
المسألة 19

المسألة 20

الف) $x^2 - x > 0$ $x^2 - 4x \geq 0$ $x^3 - x > 0$ $x^3 - x^2 \geq 0$ $\underline{1}$

$x(x-1) > 0$ $x(x-4) \geq 0$ $x(x^2-1) > 0$ $x^2(x^2-1) \geq 0$

$x > 0$ $x \neq 1$ $x > 0$ $x \geq 4$ $x > 0$ $x \neq \pm 1$ $x > 0$ $x \neq \pm 1$



الف) $x + |x| > 0$

ب) $x/|x| > 0$

$x > 0 \Rightarrow x + |x| = 2x > 0$

$D_f = (0, +\infty)$

$x < 0 \Rightarrow x + |x| = 0$

$D_f = (0, +\infty)$

Ⓟ ✓

الف) $2 - [x] \geq 0$

ب) $2 - [x] > 0$

$2 \geq [x]$

$2 > [x]$

$D_f = (-\infty, 2]$

Ⓟ ✓

$D_f = (-\infty, 2)$

الف) $[x + \frac{1}{2}] - 1 + [x + \frac{1}{2}] \geq 0 \rightarrow 2[x + \frac{1}{2}] \geq 1 \rightarrow [x + \frac{1}{2}] \geq \frac{1}{2}$

$x + \frac{1}{2} \geq 1 \rightarrow x \geq \frac{1}{2} \quad [\frac{1}{2}, +\infty)$

Ⓟ ✓

ب) $\sqrt{[x - \frac{1}{2}] + [-(x - \frac{1}{2})]} \geq 0 \quad x - \frac{1}{2} \in \mathbb{Z}$

$D_f = \{x \mid x = k + \frac{1}{2}, k \in \mathbb{Z}\}$

Scanned

الف) $\sin x - 1 \neq 0$

$\sin x \neq 1$

$D_f = R - \left\{ \cancel{k\pi} + \frac{\pi}{2} \right\}$



1, V.D. ✓

ب) $2\sin^2 x - 1 \neq 0$

$\sin^2 x \neq \frac{1}{2}$

$\sin x \neq \pm \frac{\sqrt{2}}{2}$

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

✓

الف) $2\sin x - 1 \geq 0$

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

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

باید بازه بین

ب) $\cos x \geq 1$

$D_f = \{ 2k\pi \}$

1, V.D.

✓

الف) $-1 \leq |x| - 3 \leq 1$

$2 \leq |x| \leq 4$

$2 \leq x \leq 4$

$-2 \geq x \geq -4$

$D_f = [-4, -2] \cup [2, 4]$

✓

ب) $-1 \leq x^2 + 3x + 1 \leq 1$

$x^2 + 3x \leq 0$

$x(x+3) \leq 0$

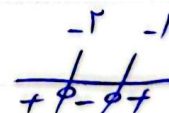
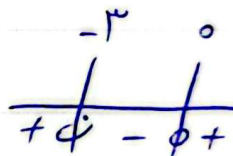
$x \geq 0 \quad x \leq -3$

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

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

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

$D_f = [-3, -2] \cup [-1, 0]$



الف) $2 - \log_2 \frac{(x-2)}{(x+2)} \geq 0$

$2 \geq \log_2$

$4 \geq x-2$

$11 \geq x$

$D_f = (2, 11]$

✓

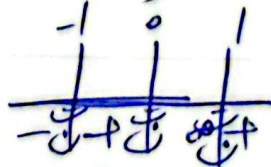
$x-2 > 0$
 $x > 2$

ب) $x^3 - x > 0$

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

$x > 0 \quad x < \pm 1$

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



Scanned with

الف) $f^x + 1 \neq 0$

$fx \neq -1$

$D_f = \mathbb{R}$

ب) $f^x \neq 1$

$x \neq 0$

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

ج) $f^x \neq f$

$x \neq \frac{1}{f}$

$D_f = \mathbb{R} - \left\{\frac{1}{f}\right\}$

د) $f^x \neq f^2$ $D_f = \mathbb{R} - \left\{\log_{\frac{1}{f}} f^2\right\}$

Ⓟ ✓

الف) $f^x + 1 \in W$

$fx \in W - 1$

$x \in \frac{W-1}{f}$

$D_f = \left\{x/x = \frac{K-1}{f}, K \in W\right\}$

Ⓟ ✓

ب) $D_f = \left\{x/x = \frac{-\Delta K + f}{-fW + f^2}, K \in W\right\}$ 10