

1K

دین سفارشات

SUBJECT:

Year:

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1) $(x-1)(x-3)(x-5) \neq 0 \Rightarrow D_f = \mathbb{R} - \{1, 3, 5\}$ (1)

2) $(x+1)(x^2-5x-6) \neq 0 \Rightarrow D_f = \mathbb{R} - \{-1, -2, 3, 6\}$ (2)

3) $x\sqrt{x-2} \neq 0 \Rightarrow x \neq \sqrt{x-2} \Rightarrow x \neq 1 \Rightarrow D_f = (-\infty, 1) \cup (1, \infty)$ (3)

4) $x\sqrt{x-2} \geq 0 \Rightarrow x \geq 2 \Rightarrow D_f = [2, \infty)$ (4)

5) $x - \sqrt{x-2} \neq 0 \Rightarrow x \neq \sqrt{x-2} \Rightarrow \begin{cases} x - \sqrt{x-2} = (x-1)(x-2) \\ x + \sqrt{x-2} = x \end{cases} \Rightarrow D_f = [\frac{1}{2}, \infty) - \{1, 2\}$ (5)

6) $x\sqrt{x-2} \geq 0 \Rightarrow x \geq 2 \Rightarrow D_f = [2, \infty)$ (6)

7) $\cos x \neq 1 \Rightarrow \cos x \neq \frac{1}{1} \Rightarrow D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2} | k \in \mathbb{Z}\}$ (7)

8) $\sin x \neq -1 \Rightarrow \sin x \neq -\frac{1}{1} \Rightarrow D_f = \mathbb{R} - \{k\pi + \frac{3\pi}{2} | k \in \mathbb{Z}\}$ (8)

9) $\cot x \neq 1 \Rightarrow D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4} | k \in \mathbb{Z}\}$ (9)

10) $\csc x \neq x \Rightarrow \sin x \neq \frac{1}{x} \Rightarrow \sin x \neq \frac{1}{x} \Rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2} | k \in \mathbb{Z}\}$ (10)

11) $(x-2)(x-3) > 0 \Rightarrow D_f = \mathbb{R} - [2, 3]$ (11)

12) $(x-1)(x-4) < 0 \Rightarrow D_f = (1, 4)$ (12)

13) $(x+1)(x+6) \geq 0 \Rightarrow D_f = \mathbb{R} - (-6, -1)$ (13)

14) $(x-1)(x-4) \leq 0 \Rightarrow D_f = [1, 4]$ (14)

15) $(x-1)(x-2) < 0 \Rightarrow D_f = (1, 2)$ (15)

16) $(x-1)(x+1) \geq 0 \Rightarrow D_f = \mathbb{R} - (-1, 1)$ (16)

17) $(x-1)(x-2) \geq 0 \Rightarrow D_f = \mathbb{R} - (-\infty, -1] \cup (2, +\infty)$ (17)

$$g = \frac{(x-1)(x-3)}{2x^3-1} \Rightarrow \frac{x-1}{2x^3-1} = \frac{x-1}{(x-1)(2x^2+2x+1)} = \frac{1}{2x^2+2x+1}$$

$$\Rightarrow D_f = [3, +\infty)$$

$$b) x^3-1 \neq 0 \Rightarrow x^3 \neq 1 \Rightarrow x \neq 1 \Rightarrow D_f = \mathbb{R} - \{1\}$$

$$c) x^3-3x > 0 \Rightarrow x(x-3) > 0 \Rightarrow D_f = \mathbb{R} - [0, 3]$$

$$\begin{cases} 1) 14-x^4 > 0 \Rightarrow x^4 < 14 \Rightarrow x < \sqrt[4]{14} \\ 2) |x|-4 > 0 \Rightarrow x > 4 \text{ or } x < -4 \\ 3) |x|-4 \neq 1 \Rightarrow x \neq 5 \text{ or } x \neq -3 \end{cases} \Rightarrow D_f = (-\infty, -4) \cup (4, \sqrt[4]{14}) - \{5, -3\}$$

$$d) \frac{(x-3)(x-5)}{x-x^2} > 0 \Rightarrow \frac{(x-3)(x-5)}{x(1-x)} > 0 \Rightarrow x > 5 \Rightarrow D_f = (5, 10) - \{9\}$$

$$\begin{aligned} 1) 10-x > 0 &\Rightarrow x < 10 \\ 2) 10-x \neq 1 &\Rightarrow x \neq 9 \\ 3) (x-5)(x-10) \geq 0 &\Rightarrow x \in (-\infty, 5] \cup [10, +\infty) \\ 4) 14-x^4 > 0 &\Rightarrow x < \sqrt[4]{14} \end{aligned} \Rightarrow D_f = (-\infty, 5] \cup [10, +\infty) - \{9\}$$

$$\begin{aligned} x &> -4 \\ x &\neq 0 \\ x &\neq 1 \end{aligned} \Rightarrow x > 0$$

x^2-x	+	+	0	-	0	+
x^2+x	+	0	-	0	+	+
$P(x)$	+	0	-	0	-	0

$$\frac{x^2-x}{x^2+x} = \frac{x(x-1)}{x(x+1)} = \frac{x-1}{x+1}$$

آردی شست

$$w_2 = -1$$

$$x \cdot f(x) \geq 0 \quad \begin{array}{ccccccc} -2 & -1 & 2 & 3 \\ + & - & + & - \\ - & + & - & + & - \end{array} \quad D_f = (-\infty, -2) \cup [-1, 2) \cup [3, +\infty) \quad (4)$$

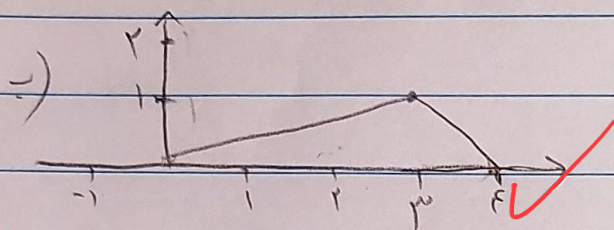
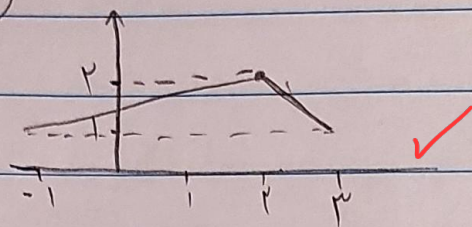
$$f(x)$$

$$x_2 = -2 \quad (1)$$

$$D_f = (-2, -1] \cup (2, 3]$$

الف)

(1.



(1, 2, 3)

