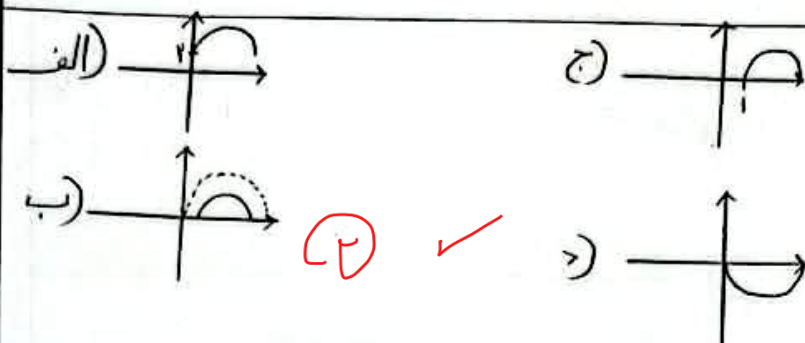




الف) $(x-2)(x-3) > 0$ $\frac{1}{+} \frac{2}{-} \frac{3}{+}$ $D_f = (-\infty, 2) \cup (3, +\infty)$

ب) $x^2 - 4x + 5 < 0$ $a+b+c=0$ $x=1$ $x=\frac{c}{a}=5$ $\frac{1}{+} \frac{1}{-} \frac{5}{+}$ $D_f = (1, 5)$

ج) $x^2 + 4x + 5 > 0$ $a+c=b$ $x=-1$ $x=-\frac{c}{a}=-5$ $\frac{-5}{+} \frac{-1}{-} \frac{1}{+}$ $D_f = (-\infty, -5] \cup [-1, +\infty)$

د) $(x-1)(x-4) \leq 0$ $\frac{1}{+} \frac{1}{-} \frac{4}{+}$ $D_f = [1, 4]$ $\textcircled{2}$ ✓

الف) $\frac{x^2 - 3x + 2}{x - 5} < 0$ $\frac{(x-1)(x-2)}{x-5}$ $\frac{1}{+} \frac{2}{-} \frac{5}{+}$ $D_f = (-\infty, 1) \cup (2, 5)$

ب) $\frac{x^2 - 1}{x^2 - 4x + 5} \geq 0$ $\frac{(x-1)(x+1)}{x^2 - 4x + 5}$ $\frac{1}{+} \frac{1}{-} \frac{5}{+}$ $D_f = (-\infty, -1] \cup (5, +\infty)$

$a+b+c=0$
 $x=1$ $x=\frac{c}{a}=5$

الف) $\sqrt{\frac{x^3 - 1}{x^3 - x}} \geq 0$ $\frac{x^3 - 1}{x^3 - x} \geq 0$ $\frac{x(x-1)(x+1)}{x(x-1)(x+1)}$ $\frac{1}{+} \frac{1}{-} \frac{0}{+}$ $D_f = (-1, 0) \cup (1, +\infty)$

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

ب) $\sqrt{\frac{x^2 - 16}{x^2 - 5x + 4}} \geq 0$ $\frac{x^2 - 16}{x^2 - 5x + 4} \geq 0$ $\frac{(x-4)(x+4)}{(x-1)(x-4)}$ $\frac{1}{+} \frac{4}{-} \frac{1}{+}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$

$x^2 - 5x + 4$
 $a+b+c=0$ $x=1$ $x=\frac{c}{a}=4$

الف) $\sqrt{4 - \sqrt{2-x}}$ $4 - \sqrt{2-x} \geq 0$ $4 \geq \sqrt{2-x}$ $16 \geq 2-x$ $14 \geq -x$ $x \geq -14$ $D_f = [-14, 2]$

ب) $\sqrt{3 - \sqrt{x-1}}$ $3 - \sqrt{x-1} \geq 0$ $3 \geq \sqrt{x-1}$ $9 \geq x-1$ $11 \geq x$ $D_f = [1, 11]$ $\textcircled{2}$ ✓

الف) $\sqrt{4-2x^2}$ ب) $\sqrt{2 x -9}$	$4-2x^2 \geq 0$ $x^2 \leq 2$ $-\sqrt{2} \leq x \leq \sqrt{2}$ $2 x -9 \geq 0$ $x \geq \frac{9}{2}$ $x \geq \frac{9}{2} \quad x \leq -\frac{9}{2}$	$D_f = [-\sqrt{2}, \sqrt{2}]$ $D_f = (-\infty, -\frac{9}{2}] \cup [\frac{9}{2}, \infty)$	6
الف) $\sqrt{\frac{ x +1}{ x -3}}$ ب) $\sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$	$x -3 \neq 0$ $x \neq 3$ $x \geq 0$ $\sqrt{x}-3 \neq 0$ $\sqrt{x} \neq 3$ $x \neq 9$	$D_f = \mathbb{R} - \{\pm 3\}$ $D_f = [0, \infty) - \{9\}$	7
الف) $\frac{\sin x}{1-\cos x}$ ب) $\frac{\cos x+1}{\sin x}$	$1-\cos x \neq 0$ $\cos x \neq 1$ $x \neq 2k\pi$ $\sin x \neq 0$ $x \neq k\pi$	ج) $\frac{\tan x+1}{\cot x-1}$ $\cot x-1 \neq 0$ $\cot x \neq 1$ $x \neq \frac{\pi}{4} + k\pi$ $D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}\}$	8
الف) $\frac{\sin x}{1-\cos x}$ ب) $\frac{\cos x+1}{\sin x}$	$1-\cos x \neq 0$ $\cos x \neq 1$ $x \neq 2k\pi$ $\sin x \neq 0$ $x \neq k\pi$	ج) $\frac{\tan x+1}{\cot x-1}$ $\cot x-1 \neq 0$ $\cot x \neq 1$ $x \neq \frac{\pi}{4} + k\pi$ $D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}\}$	9
الف) $y = \frac{1}{\sqrt{2 x-1 -\frac{1}{2}}}$ ب) $\sqrt{\frac{ x }{ x }}$	$2 x-1 -\frac{1}{2} > 0$ $x-1 > \frac{1}{4}$ $x > \frac{1}{4}$ $x-1 > \frac{1}{4} \quad x-1 < -\frac{1}{4}$ $x > \frac{5}{4} \quad x < \frac{3}{4}$	$D_f = (-\infty, \frac{3}{4}) \cup (\frac{5}{4}, \infty)$	10
الف) $y = \sqrt{4-2 x }$ ب) $\sqrt{\frac{ x }{ x }}$	$4-2 x \geq 0$ $x \leq 2$ $-2 \leq x \leq 2$ $x \neq 0$ $x \neq 0$	$D_f = [-2, 2]$ $D_f = \mathbb{R} - \{0\}$	11