

$$\sqrt{\frac{x^2 - 4x + 9}{x^2 - 10x + 19}} \geq 0 \quad \checkmark \quad \frac{1 \quad 4 \quad 9 \quad 1}{+ \quad - \quad + \quad - \quad +} \quad \frac{(x-4)(x-1)}{(x-2)(x-1)} \quad (-\infty, 1] \cup (4, \infty)$$

b) $\sqrt{\frac{4x^2 - 5x + 3}{3x^2 - 4x + 6}} \geq 0 \Rightarrow \frac{(4x+1)(x-3)}{(3x-4)(x-1)} \Rightarrow \frac{-3 \quad 4 \quad 3}{4 \quad - \quad 1 \quad 4} \Rightarrow \frac{1 \quad 5 \quad 4}{4 \quad - \quad 1 \quad 4}$

$$\sqrt{\frac{4x^2 - 5x + 3}{3x^2 - 4x + 6}} \geq 0 \quad \frac{-\frac{1}{4} \quad 1 \quad \frac{3}{4} \quad 3}{+ \quad - \quad + \quad - \quad +} \Rightarrow (-\infty, -\frac{1}{4}] \cup (1, \frac{3}{4}) \cup [3, \infty)$$

$$D = (-\infty, 1) \cup (1, \frac{3}{4}) \cup [\frac{3}{4}, +\infty)$$

$$\sqrt{x} + \sqrt{x-1} \leq \sqrt{2} \Rightarrow \sqrt{x-1} \leq \sqrt{2} - \sqrt{x} \Rightarrow x-1 \leq 2 + x - 2\sqrt{2}\sqrt{x}$$

بجانب 1

$$\sqrt{x} - \sqrt{x-1} \geq 0 \rightarrow x \leq 2$$

$$D_f = [0, 2]$$

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

$$0 \leq 3 + x - 2\sqrt{2}\sqrt{x}$$

$$\sqrt{2}\sqrt{x} \geq 0 \Rightarrow \underline{x \geq 0}$$

14,0

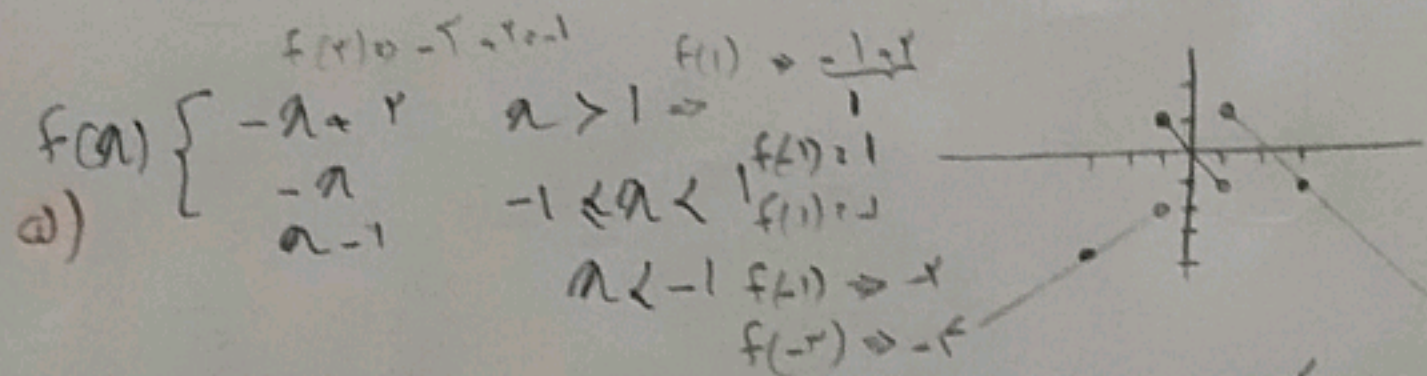
نورانی

1) $A = \{1, 2, 3\}$ $B = \{2, 3\}$
 $A \times B = \{(1, 2), (1, 3), (2, 2), (2, 3), (3, 2), (3, 3)\} = \{(1, 2), (1, 3), (2, 2), (2, 3), (3, 2), (3, 3)\}$

2) $f(a) = \{(1, m), (2, 1), (-2, m), (-2, m), (2, m+1), (m, f)\}$
 $g(a) = \{(1, m), (2, 1), (m, f), (2, m+1), (-2, m), (-1, 2)\}$
 $\{(-2, -1), (-2, -1), (1, 1), (-1, 1)\}$
 $\{(-2, -1), (-2, -1), (1, 1), (-1, 1)\}$
 $\{(-2, -1), (-2, -1), (1, 1), (-1, 1)\}$

3) $f(a) = \begin{cases} a^2 - 1 & a < 1 \\ a + b & 1 \leq a \leq 2 \\ a^2 & a > 2 \end{cases}$
 $f(1) = 1 - 1 = 0$
 $f(2) = 2 + b = 1 \Rightarrow b = -1$
 $f(3) = 9 = 1 \Rightarrow 9 = 1$

4) $f(a) = \begin{cases} a - 2 & a \geq 2 \\ 2 - a & a < 2 \end{cases}$
 $f(2) = 2 - 2 = 0$
 $f(1) = 2 - 1 = 1$
 $f(3) = 3 - 2 = 1$



$R = \{1\}$
 $R = (-\infty, 1]$

5) $x^2 + y^2 + 1 = 0$
 $x^2 + y^2 = -1$
 $x^2 + y^2 = -1$
 $x^2 + y^2 = -1$

6) $a \sin v = v \sin a \Rightarrow a = 1 \Rightarrow 1 \cdot \sin v = v \Rightarrow \sin v = v$
 $\Rightarrow v = 0$
 $\Rightarrow a = 0$

7) $\sqrt{\frac{a-1}{a-2}} + \sqrt{\frac{2-m}{m}} = 1$
 $\sqrt{\frac{a-1}{a-2}} + \sqrt{\frac{2-m}{m}} = 1$

8) $\sqrt{a^2 - 4a + 4} = 1$
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