

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

$$B^c = \{(2, 2), (2, 3), (3, 2), (3, 3)\} \rightarrow A \times B - B^c = \{(1, 2), (1, 3)\}$$

$$1) f(x) = \{(3, m^2), (2, 1), (-3, m), (-2, m), (3, m+2), (m, 4)\}$$

$m^2 - m - 2 = 0$

$m = 2$ or $m = -1$

$$2) g(x) = \{(3, m^2), (2, 1), (m, 4), (3, m+2), (-2, m), (-1, 3)\}$$

$m^2 = m + 2$

بهمین مقدار m

$$f(x) = \begin{cases} x^2 - 1 & ; x \leq 1 \\ ax + b & ; 1 \leq x \leq 2 \\ x^3 & ; x \geq 2 \end{cases}$$

$a + b = 0$

$g = a/b = -8$

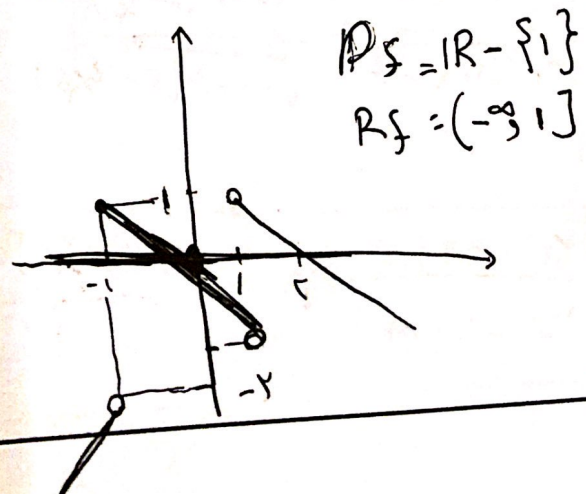
$a \times b = (-8) \times 8 = -64$

$$f(x) = \begin{cases} 2x - 3 & ; x \geq K \\ K - 3x & ; x \leq K \end{cases}$$

$2K - 3 = 6 - 3K$

$5K = 9 \rightarrow K = \frac{9}{5}$

$$f(x) = \begin{cases} -x + 2 & ; x > 1 \\ -x & ; -1 \leq x < 1 \\ x - 1 & ; x < -1 \end{cases}$$



$$1) 2y^3 + x^2 + 1 = 0 \rightarrow x^2 = -1 \rightarrow 2y^3 = -1 \rightarrow y^3 = -1/2 \rightarrow y = -1/2 \rightarrow \text{تابع}$$

$$2) x^2 + 4y^2 - 2x - 12y + 10 = 0 \rightarrow (x-1)^2 + (2y-3)^2 = 0 \rightarrow \begin{cases} y = 3/2 \\ x = 1 \end{cases} \rightarrow \text{تابع}$$

$$1) x \sin y = y \sin x \rightarrow \begin{cases} x=0 \rightarrow 0 = y \sin(0) \\ y=0 \rightarrow 0 = x \sin(0) \end{cases} \rightarrow y = 0 \text{ یا } x = 0$$

$$\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \rightarrow \text{①} \rightarrow \begin{cases} y = 1/x = 1 \\ y = -1/x = -1 \end{cases}$$

$$1) y = \sqrt{\frac{x-1}{x-3}} + \sqrt{\frac{3-x}{x}} \rightarrow \begin{cases} \sqrt{\frac{x-1}{x-3}} \\ \sqrt{\frac{3-x}{x}} \end{cases} \rightarrow D_f = (0, 1]$$

$$2) \sqrt{x} + \sqrt{y-1} = \sqrt{3} \rightarrow \begin{cases} y-1 \geq 0 \rightarrow y \geq 1 \\ x \geq 0 \rightarrow 3 \geq x \geq 0 \end{cases} \rightarrow D_f = [0, 3]$$

$$y = \sqrt{\frac{x^2 - 4x + 4}{x^2 - 10x + 14}} \rightarrow \sqrt{\frac{(x-1)(x-4)}{(x-2)(x-1)}}$$

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

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$$1) \sqrt{\frac{2x^2 - 2x + 3}{3x^2 - 4x + 4}} = \sqrt{\frac{(x-1)(x-3/4)}{(x-1)(x-4/3)}} \rightarrow D_f = (-\infty, 1) \cup [3/4, +\infty)$$

$$2) \sqrt{\frac{2x^2 - 2x + 3}{3x^2 - 4x + 4}} = \sqrt{\frac{(x-1)(x-3/4)}{(x-1)(x-4/3)}} \rightarrow D_f = (-\infty, 1) \cup [3/4, +\infty)$$

$$\mathbb{R} - [4/3, 3/4]$$