

نام و نام خانوادگی آیین پاسخنامه تشریحی تکلیف شماره کلاس تاریخ دفتر ۱

$$A = \{1, 2, 3\} \quad B = \{2, 3\} \quad A \times B - B^2 = ?$$

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

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

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

$$f(m) = \sum (3, m^2), (2, 1), (-1, m), (-1, m), (2, m+2), (m, 2)$$

$$m^2 = m+2 \rightarrow m^2 - m - 2 = 0 \rightarrow (m-2)(m+1) = 0 \rightarrow m = 2 \text{ or } m = -1$$

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

$$f(n) = \begin{cases} m^2 - 1 & n \leq 1 \\ an + b & 1 \leq n \leq 2 \\ n^3 & n \geq 2 \end{cases}$$

$$a = -b \quad a + b = 1 \quad a = 1 \quad b = -1$$

$$a = 1 \quad b = -1 \quad a + b = 1 \quad a = 1 \quad b = -1$$

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

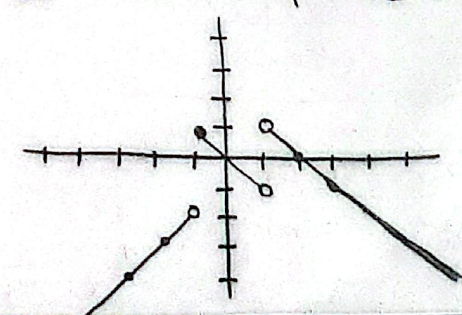
$$K = 1 \quad K = 1 \quad K = 1$$

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

$$D_f = \mathbb{R} - \{1\}$$

$$R_f = (-\infty, 1]$$

شکل تابع را رسم و بردار دامنه را مشخص کن



الف) $xy^3 + x^2 + 1 = 0 \rightarrow xy^3 = -x^2 - 1$ ضابط $xy^3 = -x^2 - 1$
 $y_1^3 = y_2^3 \rightarrow y_1 = y_2$ هست $\checkmark$

ب) $x^2 + \varepsilon y^2 - 2x - 12y + 1 = 0$ $\frac{1}{\varepsilon}$ ضابط $\checkmark$
 $x^2 - 2x + 1 + \varepsilon y^2 - 12y + 9 = 0 \Rightarrow (x-1)^2 + (\varepsilon y - 6)^2 = 0 \rightarrow \varepsilon y = 6$

الف) $x \sin y = y \sin x$ ضابط $\frac{1}{x}$
 $1 \cdot \sin y = y \cdot 0 \rightarrow 1 \cdot \sin y = 0 \rightarrow \sin y = 0$
 $y = k\pi \rightarrow y = 0, \pi, 2\pi, \dots$

ب) $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$ ضابط $\sqrt{\frac{x}{y}}$
 $\frac{x}{y} + \frac{y}{x} + 2\sqrt{\frac{x}{y} \cdot \frac{y}{x}} = 4 \rightarrow \frac{x}{y} + \frac{y}{x} + 2 = 4$
 $\frac{x^2 + y^2}{xy} = 2 \rightarrow x^2 + y^2 - 2xy = 0 \rightarrow (x-y)^2 = 0 \rightarrow x = y$ ضابط $\checkmark$

الف) $y = \sqrt{\frac{n-1}{n-4}} + \sqrt{\frac{2-n}{n}}$ ضابط $\frac{1}{\sqrt{n-4}}$
 $D = (-\infty, 1] \cup (2, +\infty)$ $D_f = (0, 2] \cup [4, +\infty)$

ب) $\sqrt{x} + \sqrt{y-1} = \sqrt{3}$ ضابط $\sqrt{y-1}$
 $\sqrt{y-1} = \sqrt{3} - \sqrt{x}$
 $\sqrt{3} - \sqrt{x} > 0 \rightarrow \sqrt{x} < \sqrt{3} \rightarrow x < 3$

الف) $y = \frac{\sqrt{x^2 - \sqrt{x+4}}}{\sqrt{x-1} \cdot \sqrt{x+4}}$ ضابط $\frac{1}{\sqrt{x-1}}$
 $\sqrt{x-1} \cdot \sqrt{x+4} \rightarrow (x-1)(x+4)$ ضابط $\frac{1}{\sqrt{x-1}}$
 $D_f = (-\infty, 1] \cup (4, +\infty)$

ب) $y = \sqrt{\frac{x^2 - \sqrt{x+4}}{x^2 - 1 \cdot \sqrt{x+4}}}$ ضابط $\frac{1}{\sqrt{x-1}}$
 $D_f = (-\infty, 1] \cup (2, 4] \cup (4, +\infty)$

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

ب) $y = \sqrt{\frac{x^2 - \sqrt{2x+3}}{x^2 - \sqrt{2x+3}}}$ ضابط $\frac{1}{\sqrt{x^2 - \sqrt{2x+3}}}$
 $D_f = (-\infty, 1) \cup (1, \frac{3}{2}) \cup [\frac{3}{2}, +\infty)$