

نام و نام خانوادگی: زهره امیری ... پاسخنانه تشریحی تکلیف شماره ۱! ... کلاس: یازدهم (خبر) ...

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

$$B^2 = \{(2,2) \text{ و } (2,3) \text{ و } (3,2) \text{ و } (3,3)\}$$

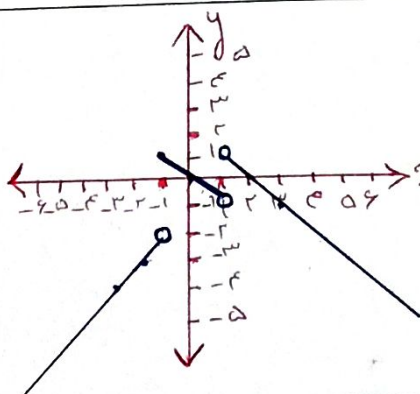
$$A \times B = B^2 = \{(1,2) \text{ و } (1,3)\}$$

الف) $m^2 = m+2 \rightarrow m^2 - m - 2 = 0 \rightarrow (m-2)(m+1) = 0 \rightarrow m=2$ غلط $m=-1$ ✓

ب) $m^2 = m+2 \rightarrow m^2 - m - 2 = 0 \rightarrow (m-2)(m+1) = 0 \rightarrow m=2$ غلط $m=-1$ غلط

اگر $x=1 \rightarrow a+b=0$ و اگر $x=2 \rightarrow 2a+b=1 \rightarrow a=1$ و $b=-1$
 $a \times b = -1$

$$2K-3 = 4-3K \rightarrow 5K=7 \rightarrow K=\frac{7}{5}$$



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

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

الف) $y^3 = -\frac{1}{2}x^2 - \frac{1}{2} \rightarrow y_1^3 = -\frac{1}{2}x^2 - \frac{1}{2} \rightarrow y_2^3 = -\frac{1}{2}x^2 - \frac{1}{2} \rightarrow y_1 = y_2$ تابع است.

ب) $4y^2 - 12y + 9 + x^2 - 2x + 1 = 0$
 $(2y-3)^2 + (x-1)^2 = 0 \rightarrow x=1, y=1.5$ تابع است.

الف) y هر مقدار طخواهی تواند $\sin x = 0 \rightarrow x = 180^\circ$ اگر x باشد تابع نیست.

ب) $\left[\text{فرد دو عدد معکوس جمع شده و برابر ۲ شده است} \rightarrow \frac{x}{y} = \frac{y}{x} = 1 \rightarrow x=y \right]$ تابع است.

الف) $\frac{x-1}{x-3} \geq 0 \rightarrow \frac{1}{x-3} - \frac{1}{x} \geq 0 \rightarrow \frac{1}{x-3} - \frac{1}{x} \geq 0 \rightarrow \frac{x - (x-3)}{x(x-3)} \geq 0 \rightarrow \frac{3}{x(x-3)} \geq 0$
 $(-\infty, 0) \cup (3, +\infty)$ (I)
 $(0, 3)$ (II)
 $(I) \cap (II) = (0, 3]$ $D_f = (0, 3]$

ب) $\sqrt{y-1} = \sqrt{3} - \sqrt{x} \rightarrow y-1 = 3 + x - 2\sqrt{3x} \rightarrow y = 4 + x - 2\sqrt{3x} \rightarrow x \geq 0$
 $D_f = [0, +\infty)$

الف) $\left[\begin{aligned} x^2 - 7x + 6 &\geq 0 \\ (x-1)(x-6) &\geq 0 \end{aligned} \right] \rightarrow \frac{1}{x-6} - \frac{1}{x-1} \geq 0 \rightarrow \frac{1}{x-6} - \frac{1}{x-1} \geq 0 \rightarrow \frac{x-1 - (x-6)}{(x-6)(x-1)} \geq 0 \rightarrow \frac{5}{(x-6)(x-1)} \geq 0$
 $D_f = (I) \cap (II) = (-\infty, 1) \cup (6, +\infty)$

$x^2 - 10x + 16 > 0 \rightarrow \frac{1}{x-8} - \frac{1}{x-2} > 0 \rightarrow \frac{1}{x-8} - \frac{1}{x-2} > 0 \rightarrow \frac{x-2 - (x-8)}{(x-8)(x-2)} > 0 \rightarrow \frac{6}{(x-8)(x-2)} > 0$
 $(-\infty, 2) \cup (8, +\infty)$ (II)

ب) $\frac{x^2 - 7x + 6}{x^2 - 10x + 16} \geq 0 \rightarrow \frac{1}{x-6} - \frac{1}{x-1} \geq \frac{1}{x-8} - \frac{1}{x-2} \rightarrow \frac{1}{x-6} - \frac{1}{x-1} - \frac{1}{x-8} + \frac{1}{x-2} \geq 0$
 $D_f = (-\infty, 1) \cup (2, 6] \cup (8, +\infty)$

الف) $\left[\begin{aligned} 2x^2 - 5x + 3 &\geq 0 \\ (x-1)(2x-3) &\geq 0 \end{aligned} \right] \rightarrow \frac{1}{x-3} - \frac{1}{x-1} \geq 0 \rightarrow \frac{1}{x-3} - \frac{1}{x-1} \geq 0 \rightarrow \frac{x-1 - (x-3)}{(x-3)(x-1)} \geq 0 \rightarrow \frac{2}{(x-3)(x-1)} \geq 0$
 $D_f = (I) \cap (II) = (-\infty, 1) \cup [1.5, +\infty)$

$3x^2 - 7x + 4 > 0 \rightarrow \frac{1}{x-4} - \frac{1}{x-1} > 0 \rightarrow \frac{1}{x-4} - \frac{1}{x-1} > 0 \rightarrow \frac{x-1 - (x-4)}{(x-4)(x-1)} > 0 \rightarrow \frac{3}{(x-4)(x-1)} > 0$
 $(-\infty, 1) \cup (4, +\infty)$ (II)

ب) $\frac{2x^2 - 5x + 3}{3x^2 - 7x + 4} \geq 0 \rightarrow \frac{(x-1)(2x-3)}{(x-4)(x-1)} \geq 0 \rightarrow \frac{2x-3}{x-4} \geq 0 \rightarrow \frac{2}{x-4} - \frac{3}{x-1} \geq 0$
 $D_f = (-\infty, 1) \cup (1.5, 4) \cup [4, +\infty)$