

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

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

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

۱

$$m^2 - m - 2 = 0 \quad (m-2)(m+1) = 0 \quad m = 2 \text{ و } -1$$

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

۲

$$\begin{cases} 1^2 - 1 = 0 \\ 2^2 = 1 \end{cases} \begin{cases} a+b=0 \\ 2a+b=1 \end{cases} \begin{cases} -a-b=0 \\ 2a+b=1 \end{cases} \begin{cases} a=1 \\ b=-1 \end{cases}$$

$$a \times b = -1$$

۳

$$2K - 3 = 4 - 3K$$

$$5K = 7$$

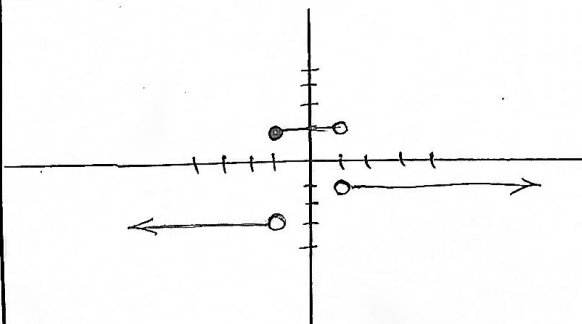
$$K = \frac{7}{5}$$

۴

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

$$R = \{1\}$$

۵



الف)  $y^3 + x^2 + 1 = 0$   $y^3 + x^2 + 1 = 0$   $y^3 + x^2 + 1 = 0$   
 $y^3 = y^3$   $y^3 = y^3$   $y_1 = y_2$   $y_1 = y_2$   $y_1 = y_2$

$\Rightarrow x^2 - 2x = (x^2 - 2x + 1) - 1 = (x-1)^2 - 1$   $y^2 - 12y = (y^2 - 12y + 36) - 36 = (y-6)^2 - 36$   
 $(x-1)^2 - 1 + (y-6)^2 - 36 + 1 = 0 \rightarrow (x-1)^2 + (y-6)^2 = 0$   
 $x=1$   $y=6$

۷

الف)  $x-1=0$   $x=1$   
 $x-3=0$   $x=3$   
 $x-2=0$   $x=2$   
 $x=0$   
 $y-1 \geq 0$   $y \geq 1$   
 $x \geq 0$   $\sqrt{x} \leq \sqrt{3}$   $x \leq 3$   
 $D = 0 \leq x \leq 3$

۸

الف)  $x^2 - \sqrt{x} + 4 \geq 0$   $(x-4)(x-1) \geq 0$   $x \geq 4$   $x \geq 1$   
 $x^2 - 10x + 14 > 0$   $(x-1)(x-2) > 0$   $x > 1$   $x > 2$   $\rightarrow x > 2$   
 $D = x > 2$

۹

$\Rightarrow \frac{x^2 - \sqrt{x} + 4}{x^2 - 10x + 14} \geq 0$   $x^2 - \sqrt{x} + 4 \rightarrow x = (4, 1)$   
 $x^2 - 10x + 14 \rightarrow x = (1, 2)$   
 $D = (-\infty, 1] \cup (2, 4] \cup (1, +\infty)$

الف)  $x^2 - 5x + 3 \geq 0$   $x \geq 1$   $x \geq \frac{3}{2}$   $\rightarrow D = x \geq \frac{3}{2}$   
 $3x^2 - \sqrt{x} + 4 > 0$   $x > 1$   $x > \frac{4}{3}$

۱۰

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