

19, 25

Year: \_\_\_\_\_

Month: \_\_\_\_\_

Day: \_\_\_\_\_

تاریخ: \_\_\_\_\_

بنام خدا  
اربابان مصائبان باز هم A

Subject: \_\_\_\_\_

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

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

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

الف)  $m^2 - m - 2 = 0 \rightarrow \frac{1 \pm 3}{2} = \begin{cases} 2 \\ -1 \end{cases} \rightarrow \begin{matrix} 2 \rightarrow (2,1)(2,4) \rightarrow \text{تابع نیست} \\ -1 \rightarrow \text{قابل قبول} \end{matrix} \rightarrow \boxed{m = -1}$

ب)  $m^2 - m - 2 = 0 \rightarrow \frac{1 \pm 3}{2} = \begin{cases} 2 \\ -1 \end{cases} \rightarrow \begin{matrix} 2 \rightarrow (2,1)(2,4) \rightarrow \text{تابع نیست} \\ -1 \rightarrow (-1,3)(-1,4) \rightarrow \text{تابع نیست} \end{matrix}$

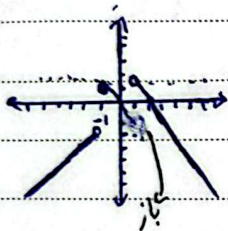
$x=1 \rightarrow 0=a+b \rightarrow a=-b$

$x=2 \rightarrow 2a+b=1 \rightarrow 2a+1=b$

$$\Rightarrow 2a-a=0 \rightarrow \begin{matrix} a=1 \\ b=-1 \end{matrix}$$

$a \times b = -1$

$2k-3 = 4-2k \rightarrow \omega k=7 \rightarrow \boxed{k = \frac{7}{\omega}}$



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

$R_f = (-\infty, 1]$

الف)  $\begin{cases} y_1^2 = -x_1^2 - 1 \\ y_2^2 = -x_2^2 - 1 \end{cases} \xrightarrow{x_1=x_2} y_1^2 = y_2^2 \rightarrow y_1 = y_2 \rightarrow \text{تابع است}$

ب)  $(x^2-2x+1) + (4y^2-12y+9) = (x^2-1) + (2y-3)^2 = 0 \rightarrow \begin{matrix} \text{فقط برای } x=1 \text{ و } y=3 \\ \text{محقق می شود} \end{matrix} \rightarrow \text{تابع است}$

الف)  $x=0 \rightarrow 0=y \rightarrow \text{تابع نیست}$

ب)  $\frac{x}{y} + \frac{y}{x} + 1 = 4 \rightarrow \frac{x+y}{xy} = 3 \rightarrow \frac{x^2+y^2}{xy} = 2 \rightarrow x^2+y^2 = 2xy \rightarrow (x-y)^2 = 0 \rightarrow x=y \rightarrow \text{تابع است}$

الف)  $\frac{1}{x-2} \in (-\infty, 1] \cup (3, +\infty)$

$\frac{2}{x-2} \in [0, 2]$

$\Rightarrow D_f = [0, 1]$

ب)  $\sqrt{y-1} = \sqrt{3} - \sqrt{x} \quad x \geq 0, \sqrt{3} - \sqrt{x} \geq 0 \rightarrow x \leq 3$

EHSAN

$\Rightarrow D_f = [0, 3]$

