

..... کلاس نام و نام .. پاسخنامه تشریحی ریاضی شماره ۱

$$A \times B \rightarrow B^2$$

$$\{(1,2), (1,3), (2,2), (2,3), (3,2), (3,3)\} - \{(2,2), (3,2), (3,3)\}$$

$$\rightarrow \{(1,2), (1,3)\}$$

1

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

$$\Rightarrow m^2 \cdot m + 2 \Rightarrow m^3 - m - 2 = 0 \Rightarrow m(m-1) \cdot 2 = -1$$

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

$$\Rightarrow m^2 \cdot m + 3 \Rightarrow m^3 - m - 2 = 0 \Rightarrow m(m-1) \cdot 2 = 0$$

$$f(a) = \begin{cases} a^2 - 1 & ; a \leq 1 \\ a^2 + b & ; 1 < a < 2 \\ a^2 & ; a \geq 2 \end{cases} \rightarrow \begin{cases} a^2 - 1 & ; a \leq 1 \\ a^2 + b & ; 1 < a < 2 \\ a^2 + b & ; a \geq 2 \end{cases}$$

$$\begin{cases} a + b > 0 \\ a + b < 1 \end{cases} \Rightarrow \begin{cases} a > -b \\ a < 1 - b \end{cases} \Rightarrow a \times b < 1 \times (-1) = \boxed{-1}$$

3

$$f(a) = \begin{cases} 2a - 3 & ; a \geq k \\ t - 3a & ; a < k \end{cases} \xrightarrow{a \geq k} \frac{2k - 3 \cdot 2 - 3k}{2k + 3k \cdot 2 + 3} \rightarrow \Delta k \cdot 2 = 7 \Rightarrow k = \frac{7}{4}$$

4

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

$$\rightarrow 1 - \{1\} \Rightarrow (-\infty, +\infty) - \{1\}$$

$$\rightarrow (-\infty, 1]$$

5



