

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس دفتر A

الف) $4n^2 - 4n - 400 \Rightarrow n^2 - n - 100 \Rightarrow (n-9)(n+4) = 0 \Rightarrow n = 9 \text{ یا } n = -4$
 ب) $3n^2 - 11n - 20 \Rightarrow n^2 - 11n - 20 \Rightarrow (n-9)(n+1) = 0 \Rightarrow n = 9 \text{ یا } n = -1$
 ج) $4n^2 - 4n - 400 \Rightarrow n^2 - n - 100 \Rightarrow (n-9)(n+4) = 0 \Rightarrow n = 9 \text{ یا } n = -4$
 د) $4n^2 - 4n - 400 \Rightarrow n^2 - n - 100 \Rightarrow (n-9)(n+4) = 0 \Rightarrow n = 9 \text{ یا } n = -4$

الف) $2x^2 - 2x - 12 \Rightarrow (x-4)(x+3) \Rightarrow x = 4 \text{ یا } x = -3$
 ب) $2x^2 + 2x + 3 \Rightarrow \Delta = b^2 - 4ac = 4 - 24 = -20 < 0$
 ج) $2x^2 + 2x + 3 \Rightarrow \Delta = b^2 - 4ac = 4 - 24 = -20 < 0$
 د) $2x^2 + 2x - 2 \Rightarrow \Delta = b^2 - 4ac = 4 + 16 = 20 > 0$
 $x = \frac{-2 \pm \sqrt{20}}{4} = \frac{-2 \pm 2\sqrt{5}}{4} = \frac{-1 \pm \sqrt{5}}{2}$

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

الف) $mr = m + r \Rightarrow m^2 - m - r = 0 \Rightarrow (m-r)(m+1) = 0 \Rightarrow m = r \text{ یا } m = -1$

ب) $m^2 = m + r \Rightarrow m^2 - m - r = 0 \Rightarrow (m-r)(m+1) = 0 \Rightarrow m = r \text{ یا } m = -1$

ف) $f(n) = \{(1, a^2), (1, 3a-2), (a^2, a+2)\}$
 $a^2 = 3a - 2 \Rightarrow a^2 - 3a + 2 = 0 \Rightarrow (a-1)(a-2) = 0 \Rightarrow a = 1 \text{ یا } a = 2$

$f(n) = \begin{cases} a^2 - 1 & n \leq 1 \\ a + b & 1 < n \leq 2 \\ n^2 & n \geq 2 \end{cases} \Rightarrow \begin{cases} (1) - (1) = a(1) + b \\ 0 = a + b \end{cases} \Rightarrow \begin{cases} a + b = 1 \\ -a + b = 0 \end{cases} \Rightarrow \begin{cases} a = 1 \\ b = -1 \end{cases}$
 $a \times b = 1 \times (-1) = -1$

$f(n) = \begin{cases} 2n-3 & n \geq k \\ f+3n & n \leq k \end{cases} \Rightarrow \begin{cases} 2k-3 = f-3k \\ ak = 3 \end{cases} \Rightarrow \begin{cases} k = 1 \\ k = \frac{3}{a} \end{cases}$

الف) $x^2 - 4y = 0 \Rightarrow y = \frac{x^2}{4} \Rightarrow y = 4 \Rightarrow x = \pm 4$
 ب) $|x| + |y| = 3 \Rightarrow |x| = 1 \Rightarrow x = \pm 1$
 ج) $1 < x < 2 \Rightarrow x = 1.5$
 د) $y^2 + (1) + (2(1)) + 1 = 0 \Rightarrow y^2 = -4 \Rightarrow \emptyset$

الف) $\sqrt{y_1} + m_1^2 = 2m_1 - 2$
 $\sqrt{y_2} + m_2^2 = 2m_2 - 2$
 $\sqrt{y_1} = -m_1^2 + 2m_1 - 2 = -(m_1^2 - 2m_1 + 2)$
 $\sqrt{y_2} = -m_2^2 + 2m_2 - 2 = -(m_2^2 - 2m_2 + 2)$

الف) $n \sin y = y \sin n \Rightarrow n = 0$
 ب) $\sqrt{\frac{n}{y}} + \sqrt{\frac{y}{n}} = 2 \Rightarrow \sqrt{\frac{n}{y}} = \sqrt{\frac{y}{n}} \Rightarrow \frac{n}{y} = \frac{y}{n} \Rightarrow n^2 = y^2 \Rightarrow n = \pm y$