

Β ΛΥΚΕΙΟΥ ΘΕΤΙΚΟΣ ΠΡΟΣΑΝΑΤΟΛΙΣΜΟΣ

4.14 1)

$$\vec{\alpha} + \vec{\beta} = (13, 4) \Leftrightarrow (x-3, y+4) + (2x+1, 3y+8) = (13, 4) \Leftrightarrow$$

$$\Leftrightarrow (x-3+2x+1, y+4+3y+8) = (13, 4) \Leftrightarrow (3x-2, 4y+12) = (13, 4) \Leftrightarrow \begin{cases} 3x-2=13 \\ 4y+12=4 \end{cases} \Leftrightarrow$$

$$\Leftrightarrow \begin{cases} 3x=15 \\ 4y=-8 \end{cases} \Leftrightarrow \begin{cases} x=5 \\ y=-2 \end{cases}$$

4.14 2)

$$4\vec{\alpha} = \vec{\beta} \Leftrightarrow 4 \cdot (2\kappa + \lambda, \kappa - \lambda) = (\kappa - \lambda - 1, \kappa - 5\lambda + 3) \Leftrightarrow$$

$$\Leftrightarrow (8\kappa + 4\lambda, 4\kappa - 4\lambda) = (\kappa - \lambda - 1, \kappa - 5\lambda + 3) \Leftrightarrow \begin{cases} 8\kappa + 4\lambda = \kappa - \lambda - 1 \\ 4\kappa - 4\lambda = \kappa - 5\lambda + 3 \end{cases} \Leftrightarrow \begin{cases} 8\kappa + 4\lambda - \kappa + \lambda = -1 \\ 4\kappa - 4\lambda - \kappa + 5\lambda = +3 \end{cases} \Leftrightarrow$$

$$\Leftrightarrow \begin{cases} 7\kappa + 5\lambda = -1 \\ 3\kappa + \lambda = 3 \end{cases} \Leftrightarrow \begin{matrix} \text{λύνουμε το σύστημα} \\ \dots \end{matrix} \Leftrightarrow \begin{cases} \kappa = 2 \\ \lambda = -3 \end{cases}$$

4.14 3)

$$\vec{\alpha} - 3\vec{\beta} = (18, -1) \Leftrightarrow (2\lambda + 1, 3\lambda - 1) - 3(\mu - 3, 2\mu + 5) = (18, -1) \Leftrightarrow$$

$$\Leftrightarrow (2\lambda + 1, 3\lambda - 1) - (3\mu - 9, 6\mu + 15) = (18, -1) \Leftrightarrow (2\lambda + 1 - 3\mu + 9, 3\lambda - 1 - 6\mu - 15) = (18, -1)$$

$$\Leftrightarrow (2\lambda - 3\mu + 10, -6\mu + 3\lambda - 16) = (18, -1) \Leftrightarrow \begin{cases} 2\lambda - 3\mu + 10 = 18 \\ -6\mu + 3\lambda - 16 = -1 \end{cases} \Leftrightarrow \begin{cases} 2\lambda - 3\mu = 18 - 10 \\ -6\mu + 3\lambda = -1 + 16 \end{cases} \Leftrightarrow$$

$$\Leftrightarrow \begin{cases} 2\lambda - 3\mu = 8 \\ -6\mu + 3\lambda = 15 \end{cases} : 3 \Leftrightarrow \begin{cases} 2\lambda - 3\mu = 8 \\ -2\mu + \lambda = 5 \end{cases} \Leftrightarrow \begin{cases} 2\lambda - 3\mu = 8 \\ \lambda - 2\mu = 5 \end{cases} \Leftrightarrow \begin{matrix} \text{λύνουμε το σύστημα} \\ \dots \end{matrix} \Leftrightarrow \begin{cases} \lambda = 1 \\ \mu = -2 \end{cases}$$

4.14 4)

$$5\vec{\alpha} - \vec{\beta} = (-7, 2) \Leftrightarrow 5(2x + y, x - y - 8) - (x - 1, 1 - y) = (-7, 2) \Leftrightarrow$$

$$\Leftrightarrow (10x + 5y, 5x - 5y - 40) - (x - 1, 1 - y) = (-7, 2) \Leftrightarrow$$

$$\Leftrightarrow (10x + 5y - x + 1, 5x - 5y - 40 - 1 + y) = (-7, 2) \Leftrightarrow$$

$$\Leftrightarrow (9x + 5y + 1, 5x - 4y - 41) = (-7, 2) \Leftrightarrow \begin{cases} 9x + 5y + 1 = -7 \\ 5x - 4y - 41 = 2 \end{cases} \Leftrightarrow \begin{cases} 9x + 5y = -7 - 1 \\ 5x - 4y = 2 + 41 \end{cases} \Leftrightarrow$$

$$\Leftrightarrow \begin{cases} 9x + 5y = -8 \\ 5x - 4y = 43 \end{cases} \Leftrightarrow \begin{matrix} \text{λύνουμε το σύστημα} \\ \dots \end{matrix} \Leftrightarrow \begin{cases} x = 3 \\ y = -7 \end{cases}$$