

α) Είναι:

$$\begin{aligned}(x-1)^2 + (y+3)^2 &= x^2 - 2x + 1^2 + y^2 + 2 \cdot 3 \cdot y + 3^2 = \\ &= x^2 - 2x + 1 + y^2 + 6y + 9 = x^2 + y^2 - 2x + 6y + 10\end{aligned}$$

β) Ισχύει ότι:

$$\begin{aligned}x^2 + y^2 - 2x + 6y + 10 = 0 &\stackrel{(\alpha)}{\Leftrightarrow} (x-1)^2 + (y+3)^2 = 0 \Leftrightarrow \\ \Leftrightarrow ((x-1)^2 = 0 \text{ και } (y+3)^2 = 0) &\Leftrightarrow (x-1 = 0 \text{ και } y+3 = 0) \Leftrightarrow (x = 1 \text{ και } y = -3)\end{aligned}$$