

$$\textcircled{15} \quad \vec{a} = (2, 1) \quad \vec{b} = (-3, 4)$$

- $\textcircled{1}$ i) $\vec{a} \cdot \vec{b}$ ii) $|\vec{a}|$, $|\vec{b}|$ iii) Αν θ η γωνία που σχηματίζουν τα διανύσματα $\vec{a}$ & $\vec{b}$ να βρεις $\cos \theta$

ΛΥΣΗ

$$i) \vec{a} \cdot \vec{b} = (x_1 \cdot x_2, y_1 \cdot y_2) = -6 - 4 = -10$$

$$ii) |\vec{a}| = \sqrt{2^2 + 1} = \sqrt{5}$$

$$|\vec{b}| = \sqrt{(-3)^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$$

$$iii) \cos \theta = \frac{\vec{a} \cdot \vec{b}}{|\vec{a}| |\vec{b}|} = \frac{-10}{\sqrt{5} \cdot 5} = -\frac{2}{\sqrt{5}} = -\frac{2\sqrt{5}}{5}$$