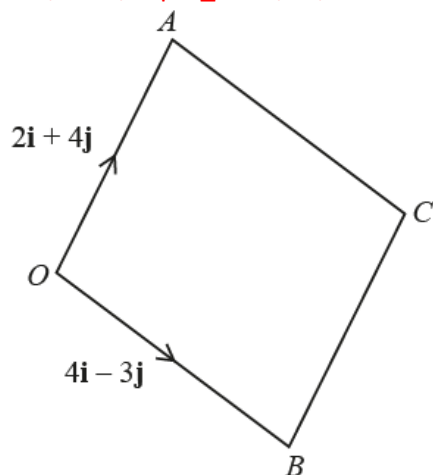**Vectors – 2022 GCE AS Mathematics A**

1. June/2022/Paper_H230/02/No.7

The diagram shows the parallelogram $OACB$ where $\overrightarrow{OA} = 2\mathbf{i}+4\mathbf{j}$ and $\overrightarrow{OB} = 4\mathbf{i}-3\mathbf{j}$.

(a) Show that $\cos AOB = -\dfrac{2\sqrt{5}}{25}$. [5]

(b) Hence find the exact value of $\sin AOB$. [2]

(c) Determine the area of $OACB$. [2]