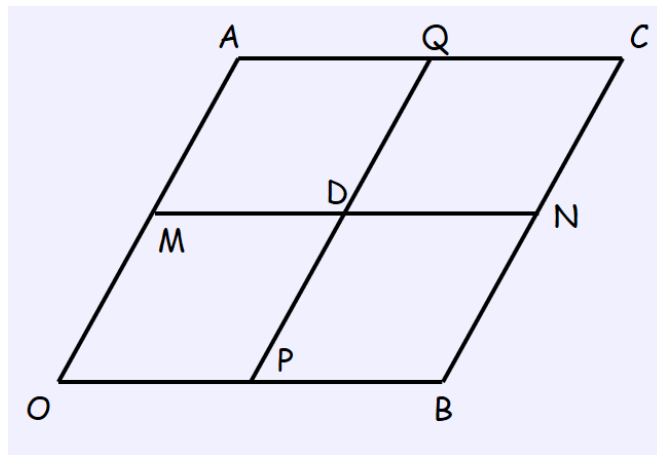


## 11A Vectors Introduction



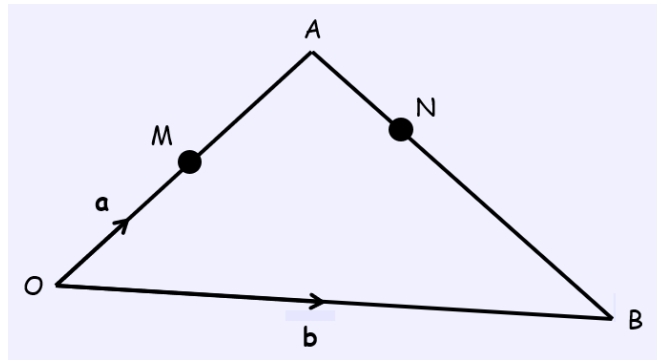
1. OACB is a parallelogram. The points P, Q, M and N are the midpoints of the sides.

$$\vec{OA} = \mathbf{a}$$

$$\vec{OB} = \mathbf{b}$$

Express the following in terms of  $\mathbf{a}$  and  $\mathbf{b}$ .

- a)  $\vec{OC}$    b)  $\vec{AB}$    c)  $\vec{QC}$    d)  $\vec{CN}$    e)  $\vec{QN}$



2. In triangle OAB, M is the midpoint of OA and N divides AB in the ratio 1:2.

$$\vec{OM} = \mathbf{a}$$

$$\vec{OB} = \mathbf{b}$$

Express  $\vec{ON}$  in terms of  $\mathbf{a}$  and  $\mathbf{b}$