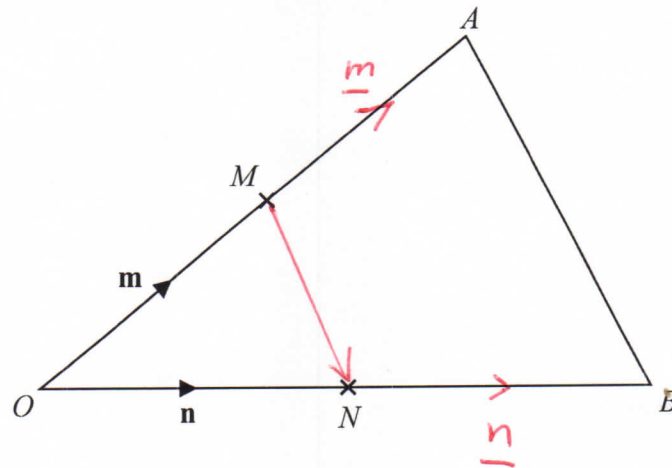


\*24

Diagram NOT  
accurately drawn $OAB$  is a triangle. $M$  is the midpoint of  $OA$ . $N$  is the midpoint of  $OB$ .

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

$$\vec{ON} = \mathbf{n}$$

Show that  $AB$  is parallel to  $MN$ .

$$\vec{MN} = \vec{MO} + \vec{ON}$$

$$= -\mathbf{m} + \mathbf{n} = \mathbf{n} - \mathbf{m}$$

$$\vec{AB} = 2\vec{MN}$$

$\therefore \vec{AB}$  and  $\vec{MN}$  are parallel.

$$\begin{aligned} \vec{AB} &= \vec{AO} + \vec{OB} \\ &= -2\mathbf{m} + 2\mathbf{n} \\ &= 2(\mathbf{n} - \mathbf{m}) \end{aligned}$$

(Total for Question 24 is 3 marks)

