

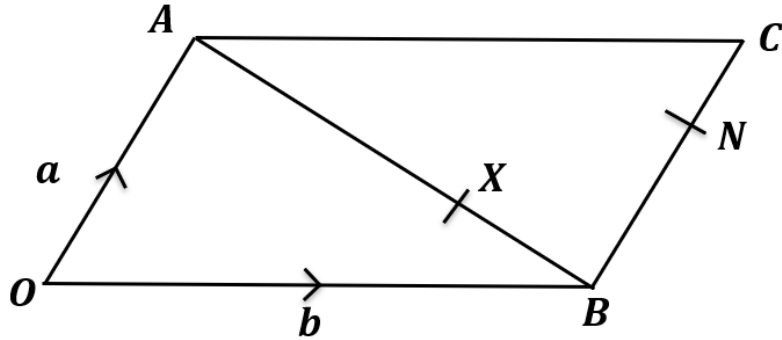
## 11.5) Solving geometric problems

## Worked example

$OACB$  is a parallelogram.

$X$  is a point on  $AB$  such that  $AX:XB = 2:1$ .  $N$  is the point such that  $NC$  is half of  $BN$ .

Show that  $\overrightarrow{XN}$  is parallel to  $\overrightarrow{OC}$ .

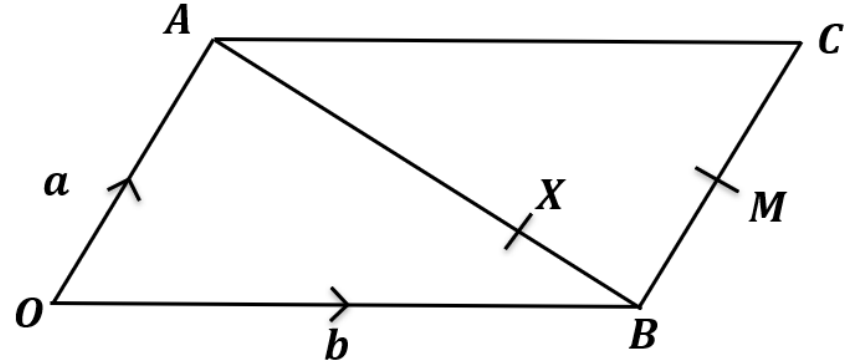


## Your turn

$OACB$  is a parallelogram.

$X$  is a point on  $AB$  such that  $AX:XB = 3:1$ .  $M$  is the midpoint of  $BC$ .

Show that  $\overrightarrow{XM}$  is parallel to  $\overrightarrow{OC}$ .



Shown

## Worked example

$$\overrightarrow{AB} = 2\mathbf{i} - 5\mathbf{j} \text{ and } \overrightarrow{AC} = 3\mathbf{i} - 7\mathbf{j}.$$

Determine  $\angle BAC$ .

## Your turn

$$\overrightarrow{AB} = 3\mathbf{i} - 2\mathbf{j} \text{ and } \overrightarrow{AC} = \mathbf{i} - 5\mathbf{j}.$$

Determine  $\angle BAC$ .

$45^\circ$