Name - _ _ _ _ _ _ _ _ Start time - _ _ : _ _ End time - _ _ : _ _

Solve the following:

1. In the triangle OBD, $\overrightarrow{OA}$ = a is $\frac{1}{4}$ of the length of $\overrightarrow{OB}$, $\overrightarrow{OC}$ = c is $\frac{1}{2}$ of the length of $\overrightarrow{OD}$ and E is the midpoint of BD.

Write down, in terms of a and c:

a) $\overrightarrow{OB}$

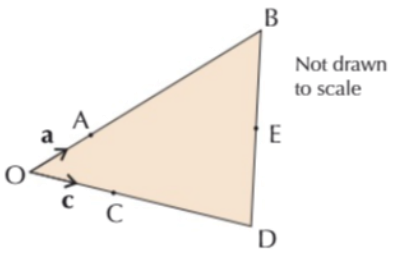
b) $\overrightarrow{OD}$

c) $\overrightarrow{BA}$

d) $\overrightarrow{AB}$

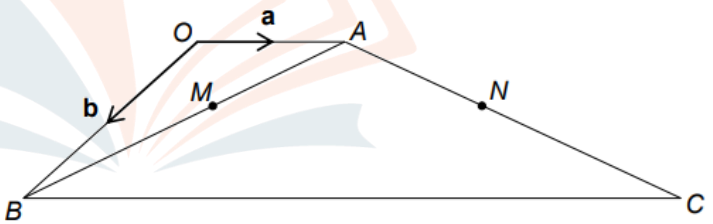
e) $\overrightarrow{AC}$

f) $\overrightarrow{OE}$



2. OACB is a trapezium

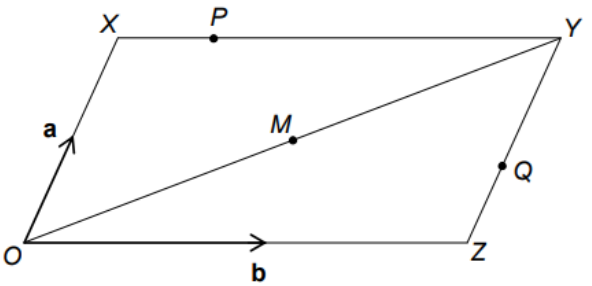
M and N are the midpoints of AB and AC. Prove, using vectors, that MN is parallel to OA.



$\overrightarrow{OA}$ = **a** $\overrightarrow{OB}$ = **b**

3. OXYZ is a parallelogram

XP : PY = 1 : 3 ZQ : QY = 2 : 3 M is the midpoint of OY



(a) Write $\overrightarrow{PQ}$ in term of a and b.

(b) Write $\overrightarrow{MQ}$ in term of a and b.

$\overrightarrow{OX}$ = **a** $\overrightarrow{OZ}$ = **b**

1 2 3 4 5 6 7 8 9