9

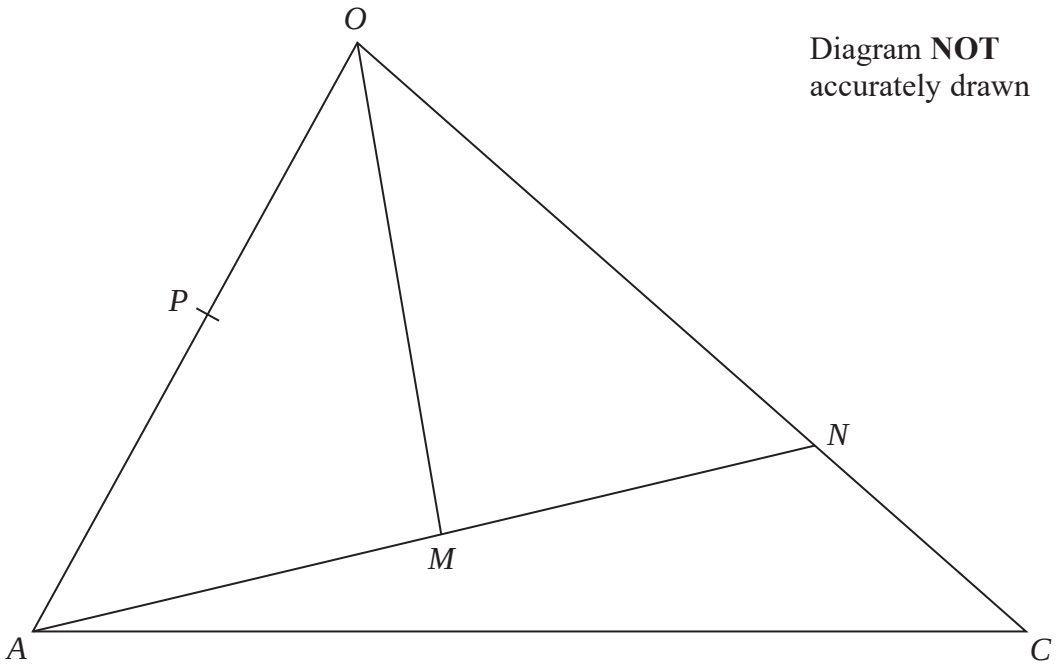

Diagram **NOT** accurately drawn

Figure 2

Figure 2 shows the triangle OAC.

The point N on OC is such that $ON : OC = 5 : 6$
M is the midpoint of AN, and P is the midpoint of OA.

$\overrightarrow{OA} = 2\mathbf{a}$ and $\overrightarrow{OC} = 6\mathbf{c}$

(a) Find, in terms of **a** and **c** or **a** or **c**, simplifying your answer where possible,

(i) $\overrightarrow{AC}$ (ii) $\overrightarrow{ON}$ (iii) $\overrightarrow{OM}$

(5)

(b) Use a vector method to show that PM is parallel to OC.

(2)

The area of triangle OAC is 30 square units.

(c) Find the area of triangle APM.

(3)

Question 9 continued

Question 9 continued

Question 9 continued

(Total for Question 9 is 10 marks)