4

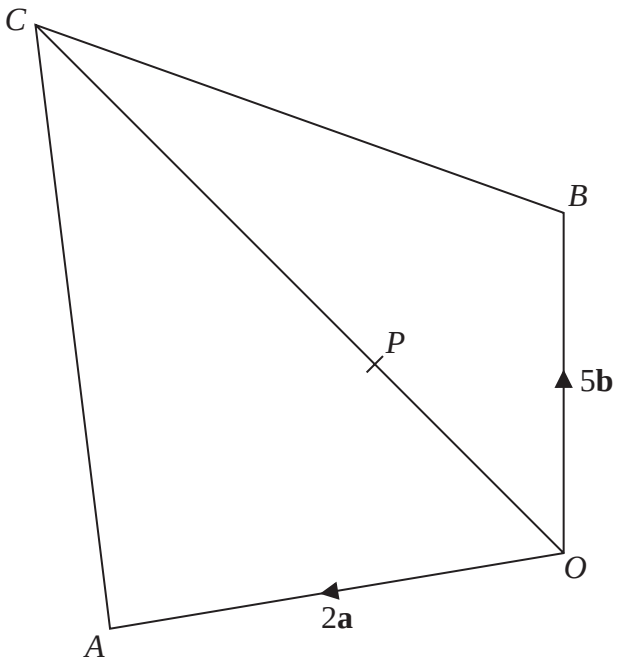

Diagram **NOT** accurately drawn

Figure 1

In Figure 1, $OACB$ is a quadrilateral in which $\overrightarrow{OA} = 2\mathbf{a}$ and $\overrightarrow{OB} = 5\mathbf{b}$

(a) Find $\overrightarrow{AB}$ in terms of **a** and **b**

(1)

P is the point on OC such that $OP : PC = 1 : 4$

Given that $\overrightarrow{BC} = 6\mathbf{a} + 5\mathbf{b}$

(b) (i) prove that A, P and B are collinear,

(ii) find a value of m and a value of n such that $AP : PB = m : n$

(5)

Question 4 continued

(Total for Question 4 is 6 marks)