

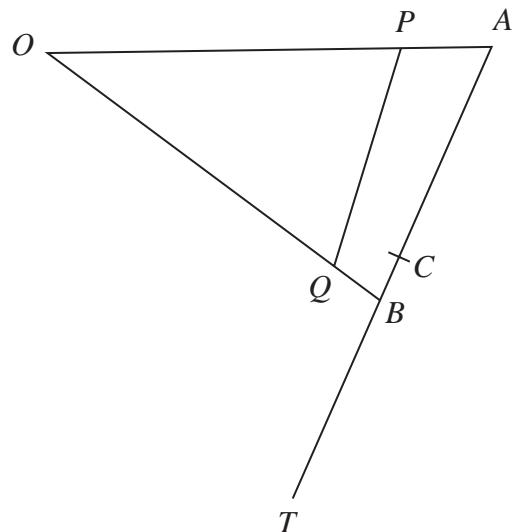
10**Figure 3**

Figure 3 shows the triangle OAB in which $\overrightarrow{OA} = 4\mathbf{a}$ and $\overrightarrow{OB} = 6\mathbf{b}$

C is the point on AB such that $AC : CB = 3 : 1$

(a) Find and simplify an expression for \overrightarrow{OC} in terms of \mathbf{a} and \mathbf{b} .

(3)

The point T is such that ABT is a straight line and $AC = CT$.

The point P is such that $\overrightarrow{OP} = \frac{3}{4}\overrightarrow{OA}$

Q is the point on OB such that the points P , Q and T are collinear.

Given that $OQ : QB = n : 1$

(b) find the value of n .

(4)



Question 10 continued

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(Total for Question 10 is 7 marks)



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