

6.

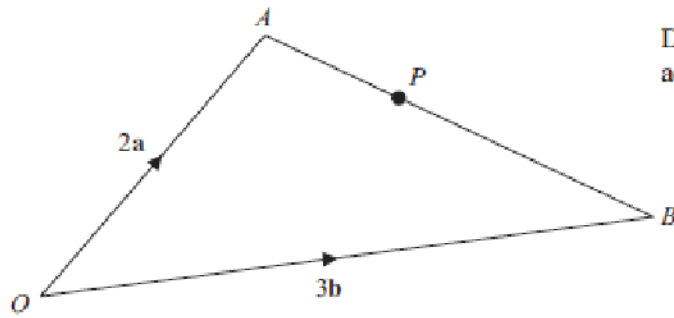


Diagram NOT accurately drawn

$OAB$  is a triangle.

$$\vec{OA} = 2\mathbf{a}$$

$$\vec{OB} = 3\mathbf{b}$$

(a) Find  $AB$  in terms of  $\mathbf{a}$  and  $\mathbf{b}$ .

$$\vec{AB} = \dots\dots\dots$$

**(1)**

$P$  is the point on  $AB$  such that  $AP : PB = 2 : 3$

(b) Show that  $\vec{OP}$  is parallel to the vector  $\mathbf{a} + \mathbf{b}$ .

**(3)**

**(4 marks)**

---