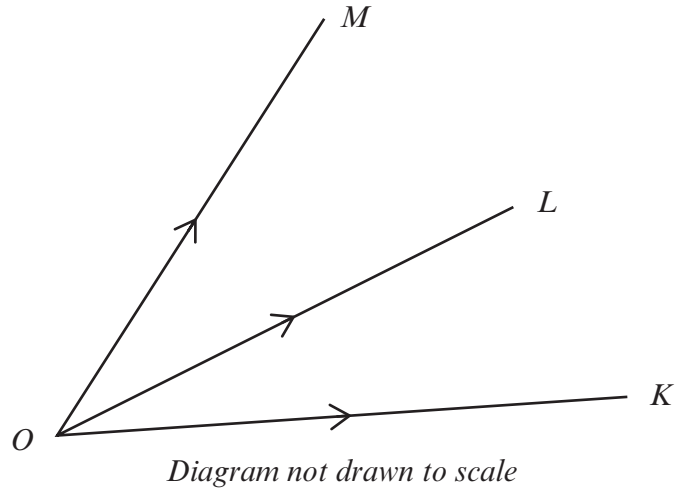


13. Vectors **OK**, **OL** and **OM** are shown in the diagram below.



Given that $\mathbf{OK} = 2\mathbf{a} + \mathbf{b}$, $\mathbf{OL} = 5\mathbf{a} + 3\mathbf{b}$ and $\mathbf{OM} = 14\mathbf{a} + 9\mathbf{b}$,

(a) express each of the following in terms of **a** and **b** in their simplest form,

(i) **KL**

.....

(ii) **LM**

.....

[3]

(b) show that $\mathbf{KM} = p\mathbf{KL}$ where p is a constant,

.....

.....

.....

.....

[2]

(c) explain fully the geometrical implication of your answer in part (b).

.....

.....

.....

[2]