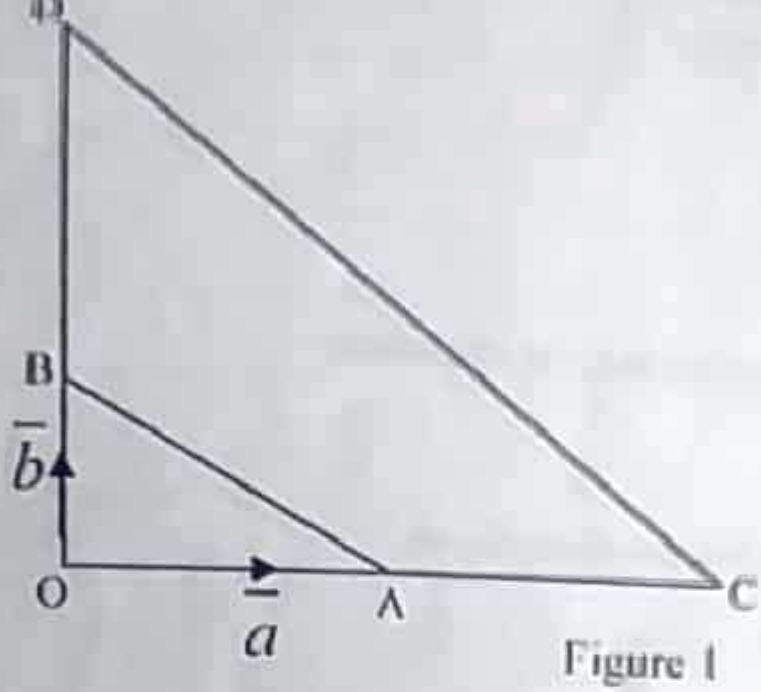

Figure 1

In figure 1, **OA**$=\bar{a}$, **OB** $=\bar{b}$ and **OD=4OB**

Find in terms of $\bar{a}$ and $\bar{b}$

(a) AB

Given that OA:AC=1:3, find the vectors

(b) OC

(c) CD

(d) State the relationship between the vectors AB and CD

(ii) OPQR is a quadrilateral with $\mathbf{OP} = 2\mathbf{p}$, $\mathbf{OQ} = 2\mathbf{q}$ and $\mathbf{OR} = 2\mathbf{r}$. A, B, C and D are the midpoints of OP, PQ, QR and OR respectively. Express, in terms of **p**, **q** and **r**, each of the vectors.

(a) **OA**, (b) **PB**, (c) **AB**, (d) **DR**, (e) **RC**, (f) **DC**.

State a relationship between **AB**, **OQ** and **DC**.

(g) Name the quadrilateral ABCD.