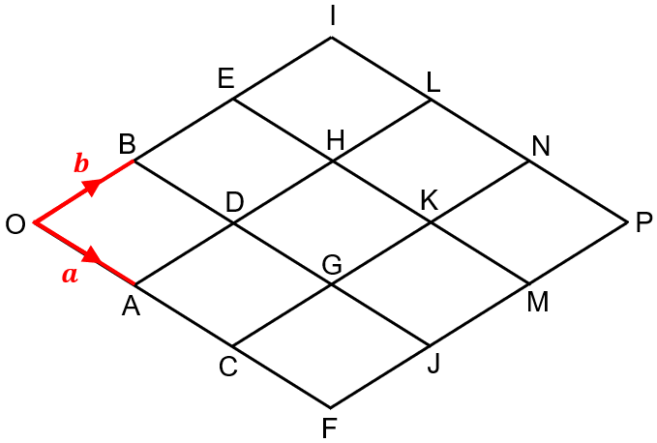
Defining Vectors

(a)

The diagram is made up of nine congruent rhombuses.

$\overrightarrow{OA} = \boldsymbol{a}$ and $\overrightarrow{OB} = \boldsymbol{b}$.



Define the following vectors in terms of $\boldsymbol{a}$ and $\boldsymbol{b}$.

(a) $\overrightarrow{OE}$

(b) $\overrightarrow{OF}$

(c) $\overrightarrow{GJ}$

(d) $\overrightarrow{MP}$

(e) $\overrightarrow{AO}$

(f) $\overrightarrow{LD}$

(g) $\overrightarrow{OH}$

(h) $\overrightarrow{DP}$

(i) $\overrightarrow{IM}$

(j) $\overrightarrow{MD}$

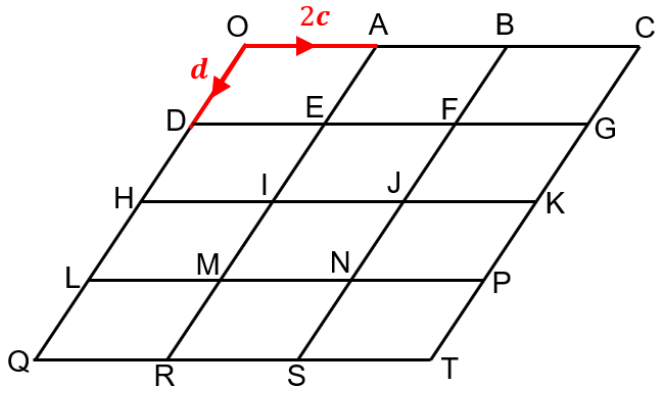
(k) $\overrightarrow{CB}$

(l) $\overrightarrow{NO}$

(b)

The diagram is made up of twelve congruent parallelograms.

$\overrightarrow{OA} = 2\boldsymbol{c}$ and $\overrightarrow{OD} = \boldsymbol{d}$.



Define the following vectors in terms of $\boldsymbol{c}$ and $\boldsymbol{d}$.

(a) $\overrightarrow{EG}$

(b) $\overrightarrow{BS}$

(c) $\overrightarrow{KJ}$

(d) $\overrightarrow{RE}$

(e) $\overrightarrow{OF}$

(f) $\overrightarrow{JT}$

(g) $\overrightarrow{MJ}$

(h) $\overrightarrow{QF}$

(i) $\overrightarrow{IL}$

(j) $\overrightarrow{HB}$

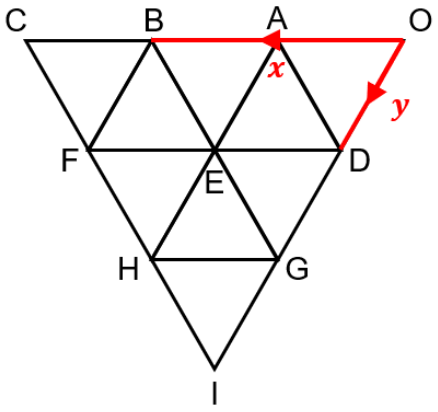
(k) $\overrightarrow{TE}$

(l) $\overrightarrow{KD}$

(c)

The diagram is made up of nine congruent equilateral triangles.

$\overrightarrow{OB} = \boldsymbol{x}$ and $\overrightarrow{OD} = \boldsymbol{y}$.



Define the following vectors in terms of $\boldsymbol{x}$ and $\boldsymbol{y}$.

(a) $\overrightarrow{FD}$

(b) $\overrightarrow{HA}$

(c) $\overrightarrow{GH}$

(d) $\overrightarrow{OC}$

(e) $\overrightarrow{DB}$

(f) $\overrightarrow{OE}$

(g) $\overrightarrow{FO}$

(h) $\overrightarrow{CE}$

(i) $\overrightarrow{HI}$

(j) $\overrightarrow{BG}$

(k) $\overrightarrow{HD}$

(l) $\overrightarrow{IF}$