Name:

Exam Style Questions

Vectors

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
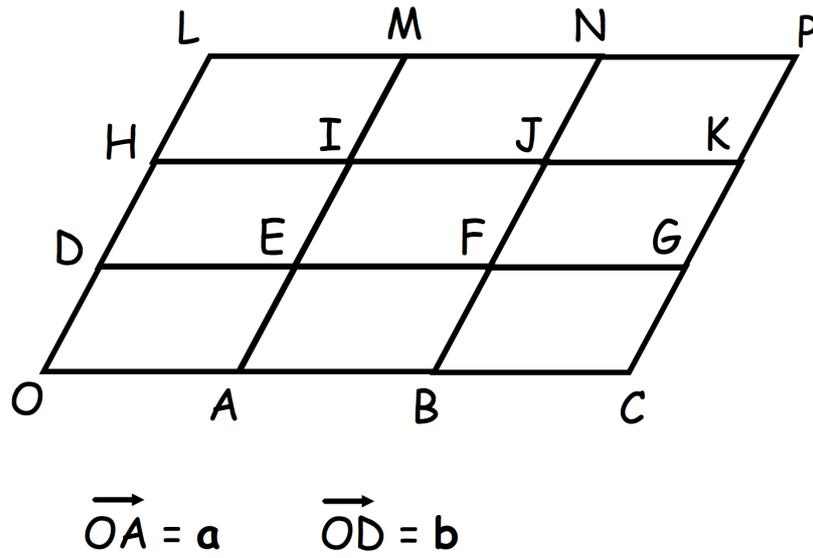4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 353

1. OCPL is formed from nine congruent parallelogram

$$\overrightarrow{OA} = \mathbf{a} \qquad \overrightarrow{OD} = \mathbf{b}$$

Write these vectors in terms of **a** and **b**.

(a) $\overrightarrow{OG}$

....

(1)

(b) $\overrightarrow{BM}$

....

(1)

(c) $\overrightarrow{CL}$

....

(1)

2. ABCDEF is a regular hexagon, with centre O.
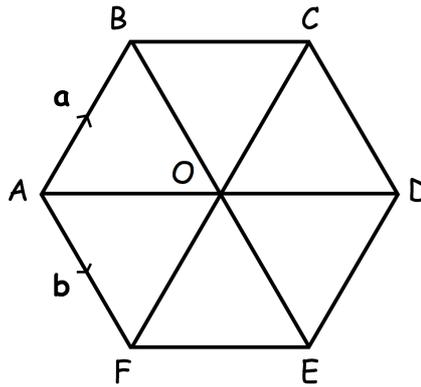
$$\overrightarrow{AB} = \mathbf{a} \qquad \overrightarrow{AF} = \mathbf{b}$$

(a) Express in terms of **a** and **b** the vector $\overrightarrow{FC}$

....

(1)

(b) Express in terms of **a** and **b** the vector $\overrightarrow{AO}$

....

(1)

(c) Express in terms of **a** and **b** the vector $\overrightarrow{BE}$

....

(1)

(d) Express in terms of **a** and **b** the vector $\overrightarrow{FD}$

....

(1)

3. OACD is a parallelogram
   B is the midpoint of OD.
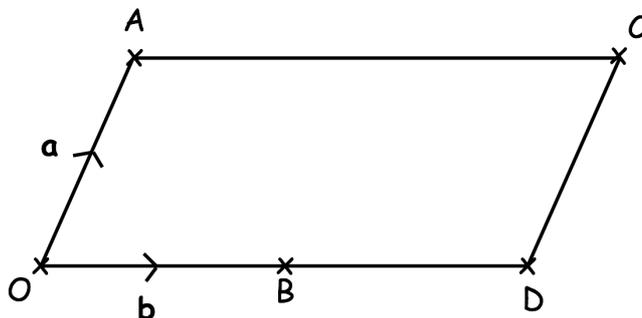
$$\vec{OA} = \mathbf{a} \qquad \vec{OB} = \mathbf{b}$$

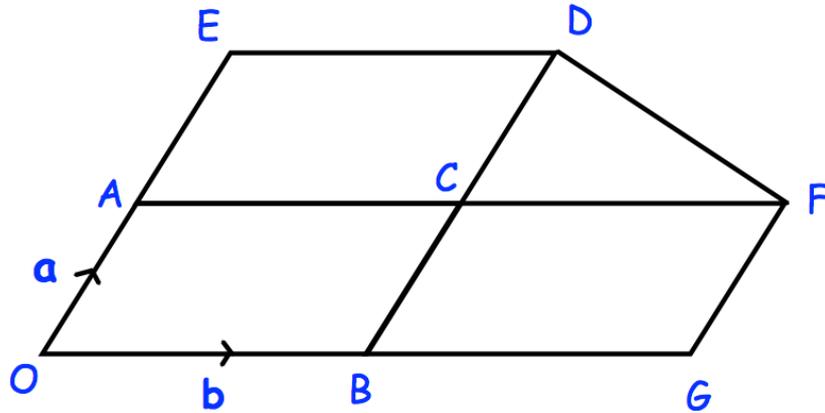(a) Express in terms of **a** and **b**, the vector $\vec{OD}$

....

(1)

(b) Express in terms of **a** and **b**, the vector $\vec{OC}$

....

(1)

4. In the diagram OBDE and OAFG are parallelograms.
B is the midpoint of OG.
A is the midpoint of OE.

$\overrightarrow{OA} = \mathbf{a}$ and $\overrightarrow{OB} = \mathbf{b}$

Express, in terms of **a** and **b**, the following vectors.
Give your answers in their simplest form.

(a) $\overrightarrow{OC}$

....
(1)

(b) $\overrightarrow{BA}$
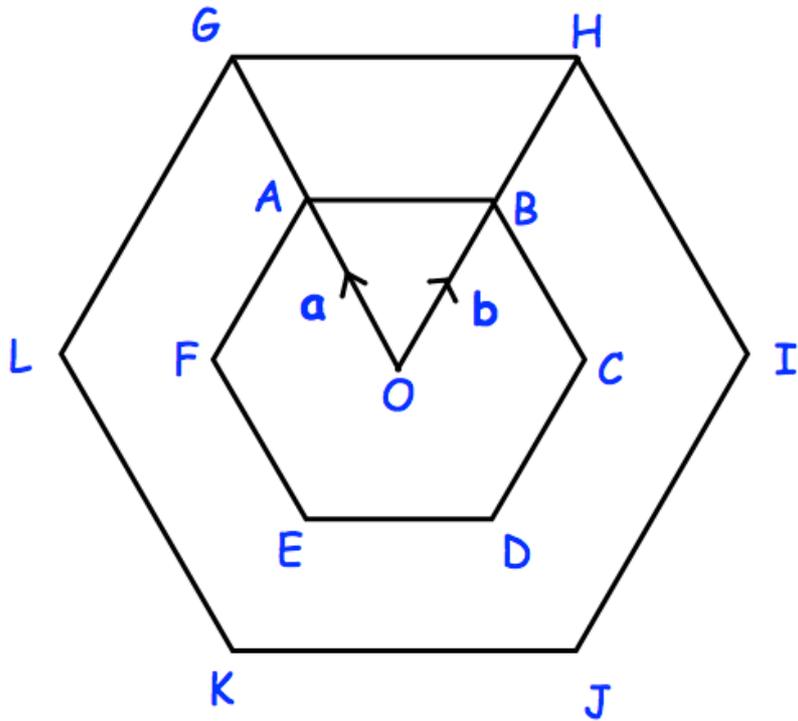
....
(1)

(c) $\overrightarrow{DF}$

....
(1)

5.

ABCDEF and GHIJKL are regular hexagons with centre O.
GHIJKL is an enlargement of ABCDEF, with scale factor 2.

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

(a) Write the vector $\overrightarrow{AB}$ in terms of **a** and **b.**

....
(1)

(b) Write the vector $\overrightarrow{OG}$ in terms of **a** and **b.**

....
(1)

(c) Write the vector $\overrightarrow{OE}$ in terms of **a** and **b.**

....
(1)

(d) Write the vector $\overrightarrow{FC}$ in terms of **a** and **b**.

....
(1)

(e) Write the vector $\overrightarrow{IK}$ in terms of **a** and **b**.

....
(1)

(f) Write the vector $\overrightarrow{LI}$ in terms of **a** and **b**.

....
(1)

(g) Write the vector $\overrightarrow{LG}$ in terms of **a** and **b**.

....
(1)

(h) Write the vector $\overrightarrow{JG}$ in terms of **a** and **b**.

....
(1)

(i) Write the vector $\overrightarrow{DL}$ in terms of **a** and **b**.

....
(1)

6. OABC is a trapezium.
Point D is the midpoint of BC.
Point E is the midpoint of AC.

$\overrightarrow{OA}$ = 2a $\overrightarrow{AB}$ = 4b and $\overrightarrow{OC}$ = 8b

A   4b   B   Not drawn accurately

2a

E   D

O   8b   C
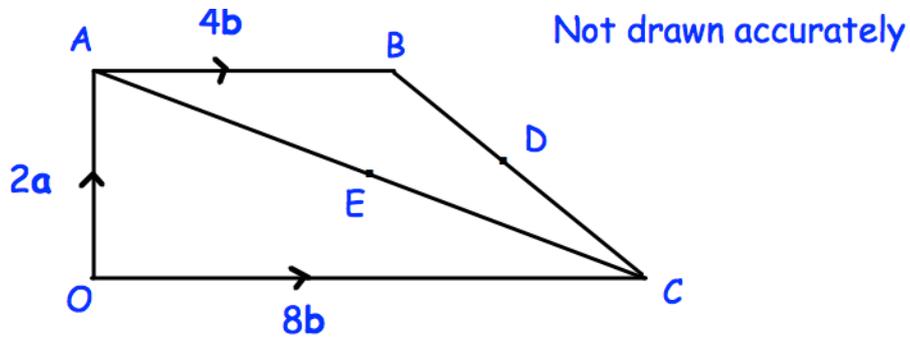
Write these vectors in terms of **a** and **b**.

(a) $\overrightarrow{OB}$

....
(1)

(b) $\overrightarrow{AC}$

....
(1)

(c) $\overrightarrow{AE}$

....
(1)