14 *ABCDEF* and *GHIJKL* are regular hexagons each with centre *O*.

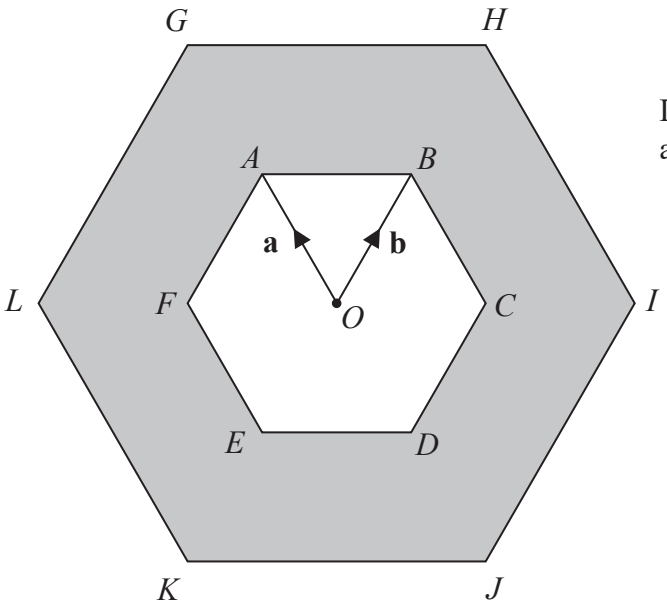


Diagram **NOT** accurately drawn

GHIJKL is an enlargement of *ABCDEF*, with centre *O* and scale factor 2

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

(a) Write the following vectors, in terms of **a** and **b**.
Simplify your answers.

(i) $\overrightarrow{AB}$

.....

(1)

(ii) $\overrightarrow{KI}$

.....

(2)

(iii) $\overrightarrow{LD}$

.....

(2)

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The triangle OAB has an area of $5\,cm^2$

(b) Calculate the area of the shaded region.

..... cm^2

(3)

(Total for Question 14 is 8 marks)

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