



EXAM PAPERS PRACTICE

GCSE AQA Maths 8300

Vectors

Question Paper

*"We will help you to
achieve A Star "*



Question 1

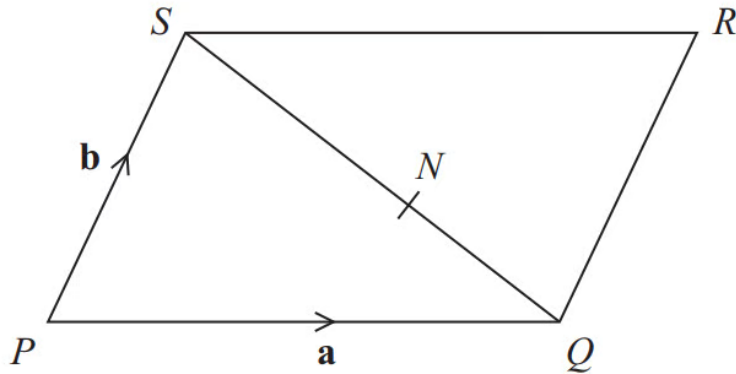


Diagram **NOT**
accurately drawn

$PQRS$ is a parallelogram.

N is the point on SQ such that $SN : NQ = 3 : 2$

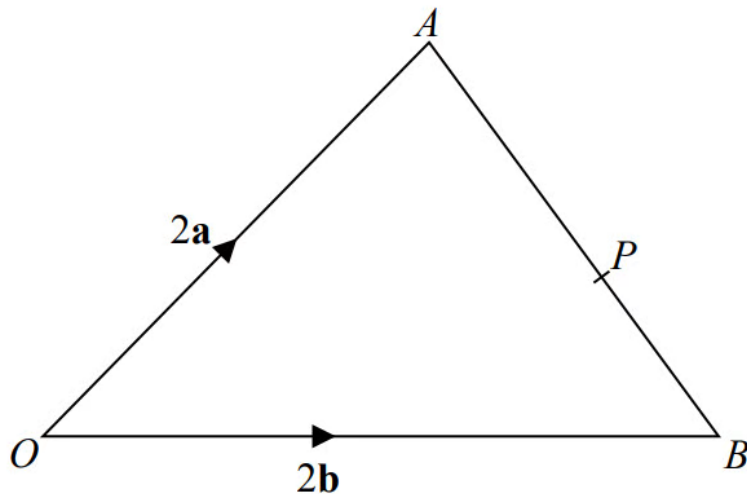
$$\vec{PQ} = \mathbf{a}$$

$$\vec{PS} = \mathbf{b}$$

(a) Write down, in terms of \mathbf{a} and \mathbf{b} , an expression for \vec{SQ} .

[1 mark]

Question 2



OAB is a triangle.

P is the point on AB such that $AP:PB = 5:3$

$$\vec{OA} = 2\mathbf{a}$$

$$\vec{OB} = 2\mathbf{b}$$

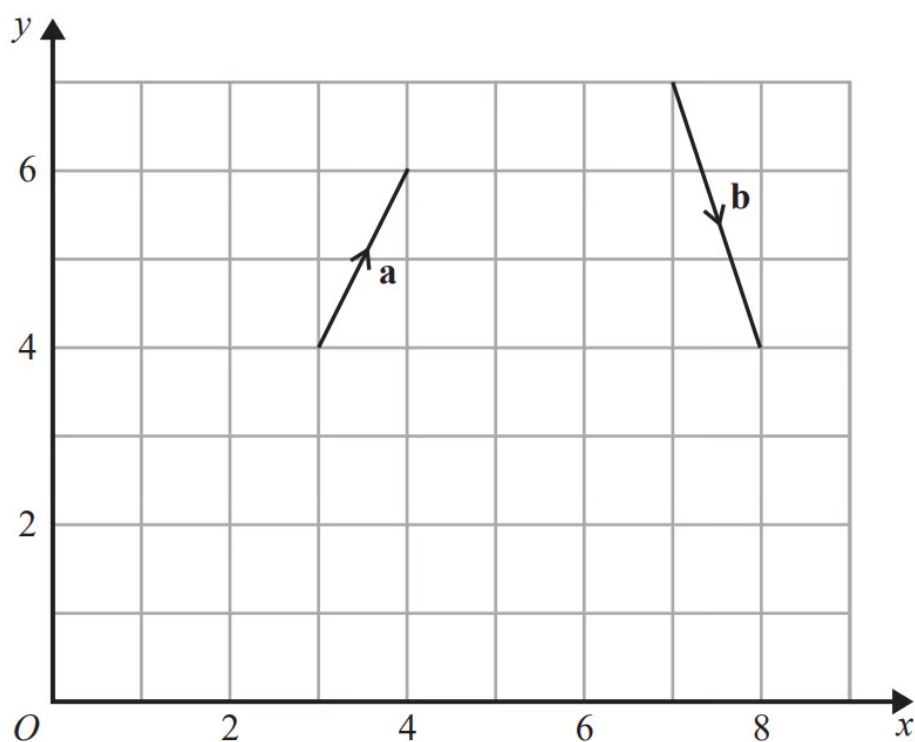
$$\vec{OP} = k(3\mathbf{a} + 5\mathbf{b}) \text{ where } k \text{ is a scalar quantity.}$$

Find the value of k .

[4 marks]

Question 3

The vector **a** and the vector **b** are shown on the grid.



- (a) On the grid, draw and label vector $-2\mathbf{a}$

[1 mark]

Question 4

- (b) Express \overrightarrow{NR} in terms of **a** and **b**.

[3 marks]

Question 5

P is the point on AB such that $AP : PB = 3 : 1$

(b) Find \vec{OP} in terms of \mathbf{a} and \mathbf{b} .

Give your answer in its simplest form.

[3 marks]

Question 6

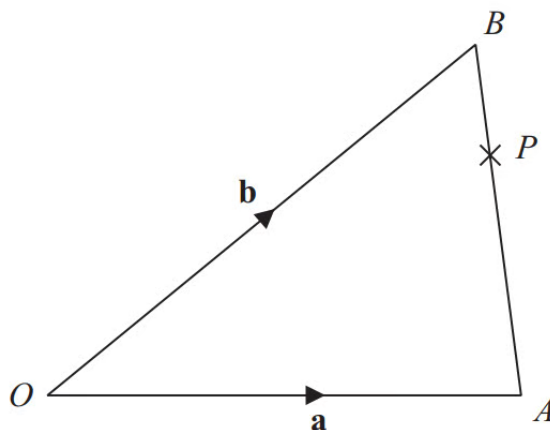


Diagram **NOT**
accurately drawn

OAB is a triangle.

$$\vec{OA} = \mathbf{a}$$

$$\vec{OB} = \mathbf{b}$$

(a) Find \vec{AB} in terms of \mathbf{a} and \mathbf{b} .

[1 mark]

Question 7

(b) Work out $\mathbf{a} + 2\mathbf{b}$ as a column vector.

[2 marks]