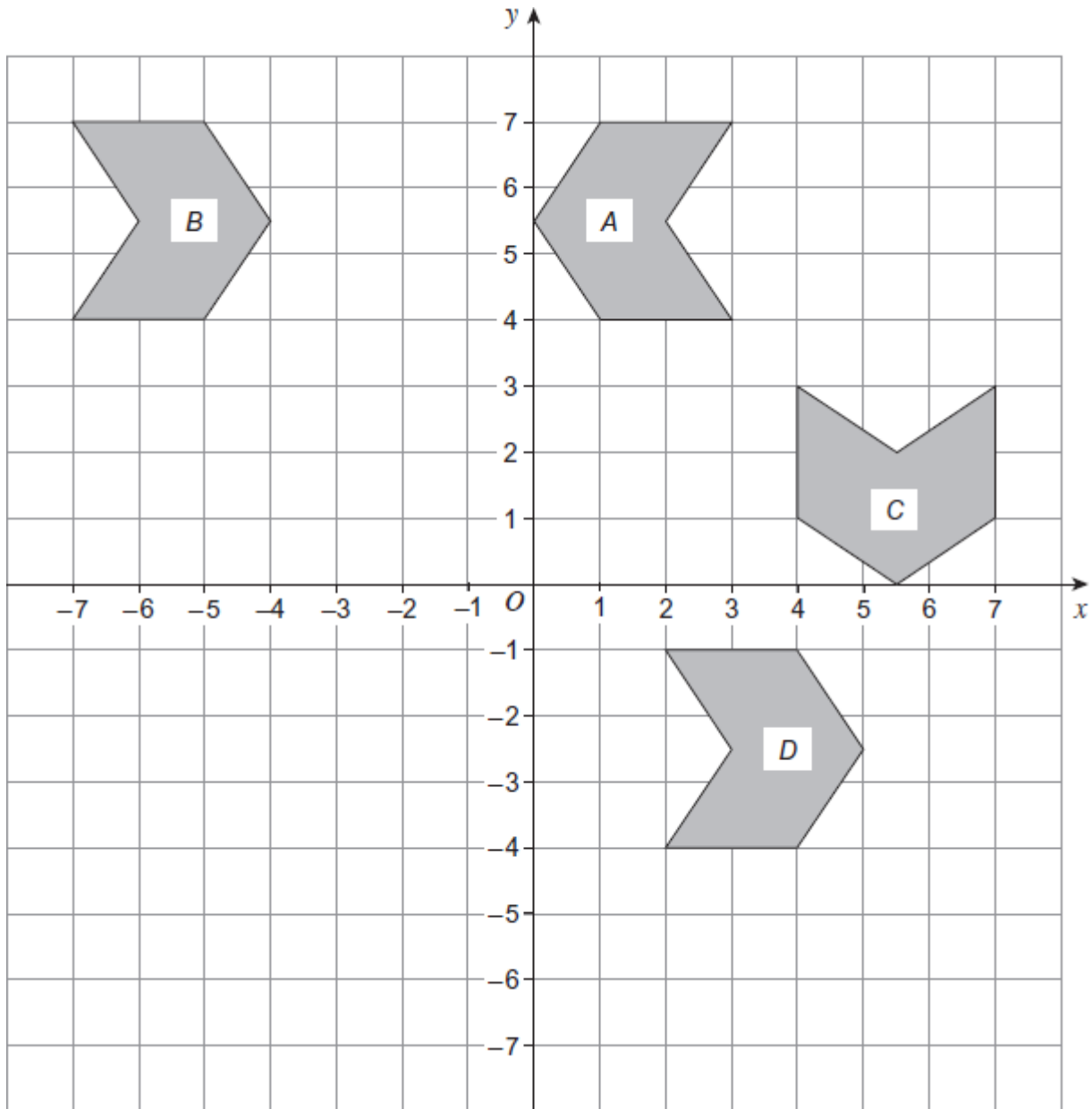


Q1.



(a) On the grid draw the mirror line that reflects shape *A* to shape *B*.

(1)

(b) On the grid draw the mirror line that reflects shape *A* to shape *C*.

(1)

(c) Describe fully the single transformation that takes shape *B* to shape *D*.

.....

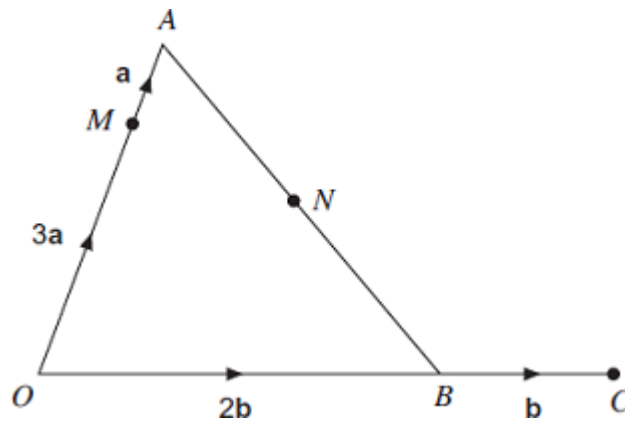
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(2)  
(Total 4 marks)

**Q2.**  $OAB$  is a triangle.  
 $OBC$  is a straight line.

Not drawn  
accurately



$$\vec{OA} = 4\mathbf{a}$$

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

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

$$\vec{OM} = 3\mathbf{a}$$

$N$  is the midpoint of  $AB$ .

- (a) Work out  $\vec{MN}$  in terms of  $\mathbf{a}$  and  $\mathbf{b}$ .  
Simplify your answer.

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Answer .....

(3)

(b) Show that  $M$ ,  $N$  and  $C$  lie on a straight line.

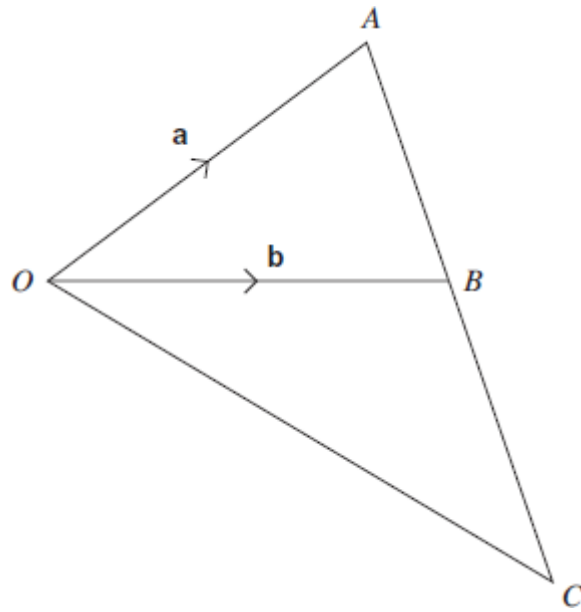
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(3)

(Total 6 marks)

Q3. The diagram shows vectors  $\vec{OA} = \mathbf{a}$  and  $\vec{OB} = \mathbf{b}$

Not drawn accurately



- (a) Write vector  $\vec{AB}$  in terms of  $\mathbf{a}$  and  $\mathbf{b}$ .

.....

Answer .....

(1)

- (b) The point  $B$  divides  $\vec{AC}$  in the ratio 2 : 3

Work out vector  $\vec{OC}$  in terms of  $\mathbf{a}$  and  $\mathbf{b}$ .

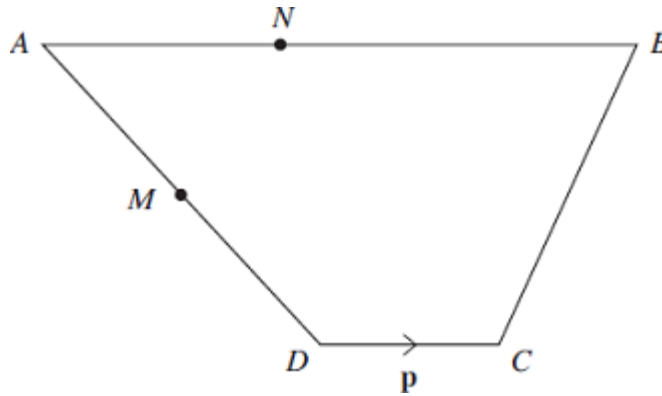
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Answer .....

(3)  
 (Total 4 marks)

Q4.  $AB$  is parallel to  $DC$ .

Not drawn accurately



$$\vec{AB} = 5\mathbf{p}$$

$$\vec{DC} = \mathbf{p}$$

$$\vec{DA} = 2\mathbf{q} - \mathbf{p}$$

(a) Show that  $\vec{CB} = 2\mathbf{q} + 3\mathbf{p}$

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(1)

(b)  $M$  is the midpoint of  $AD$ .

$$\vec{AN} : \vec{NB} = 2 : 3$$

Show that  $MN$  is parallel to  $CB$ .

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(4)  
(Total 5 marks)