

- 1 A triangle has vertices  $P$ ,  $Q$  and  $R$ .

The coordinates of  $P$  are  $(-3, -6)$

The coordinates of  $Q$  are  $(1, 4)$

The coordinates of  $R$  are  $(5, -2)$

$M$  is the midpoint of  $PQ$ .

$N$  is the midpoint of  $QR$ .

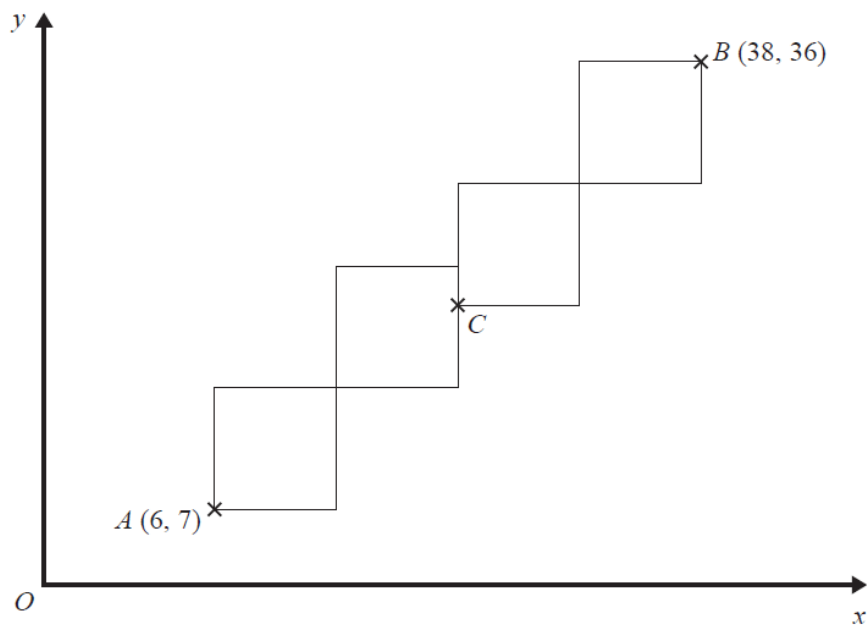
Prove that  $MN$  is parallel to  $PR$ .

You must show each stage of your working.

(Total for Question is 4 marks)

- 2 A pattern is made from four identical squares.

The sides of the squares are parallel to the axes.



Point  $A$  has coordinates  $(6, 7)$

Point  $B$  has coordinates  $(38, 36)$

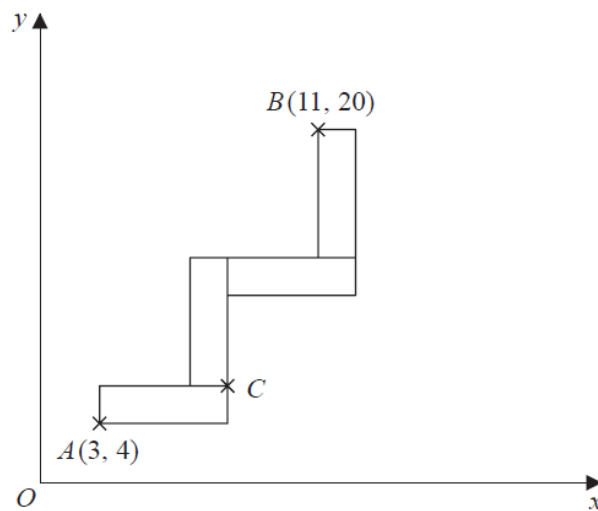
Point  $C$  is marked on the diagram.

Work out the coordinates of  $C$ .

(....., .....) )

(Total for Question is 5 marks)

- 3 A pattern is made from four identical rectangles.  
The sides of the rectangles are parallel to the axes.



Point *A* has coordinates (3, 4)  
Point *B* has coordinates (11, 20)  
Point *C* is marked on the diagram.

Work out the coordinates of *C*.  
You must show all your working.

(....., .....) )

(Total for Question is 5 marks)