

8300

## GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

---

Geometry

Transformations - Translation

v1.0

---

Name \_\_\_\_\_

### Materials

For this paper you must have:

- Mathematical instruments

### Information

- The marks for questions are shown in brackets

### Advice

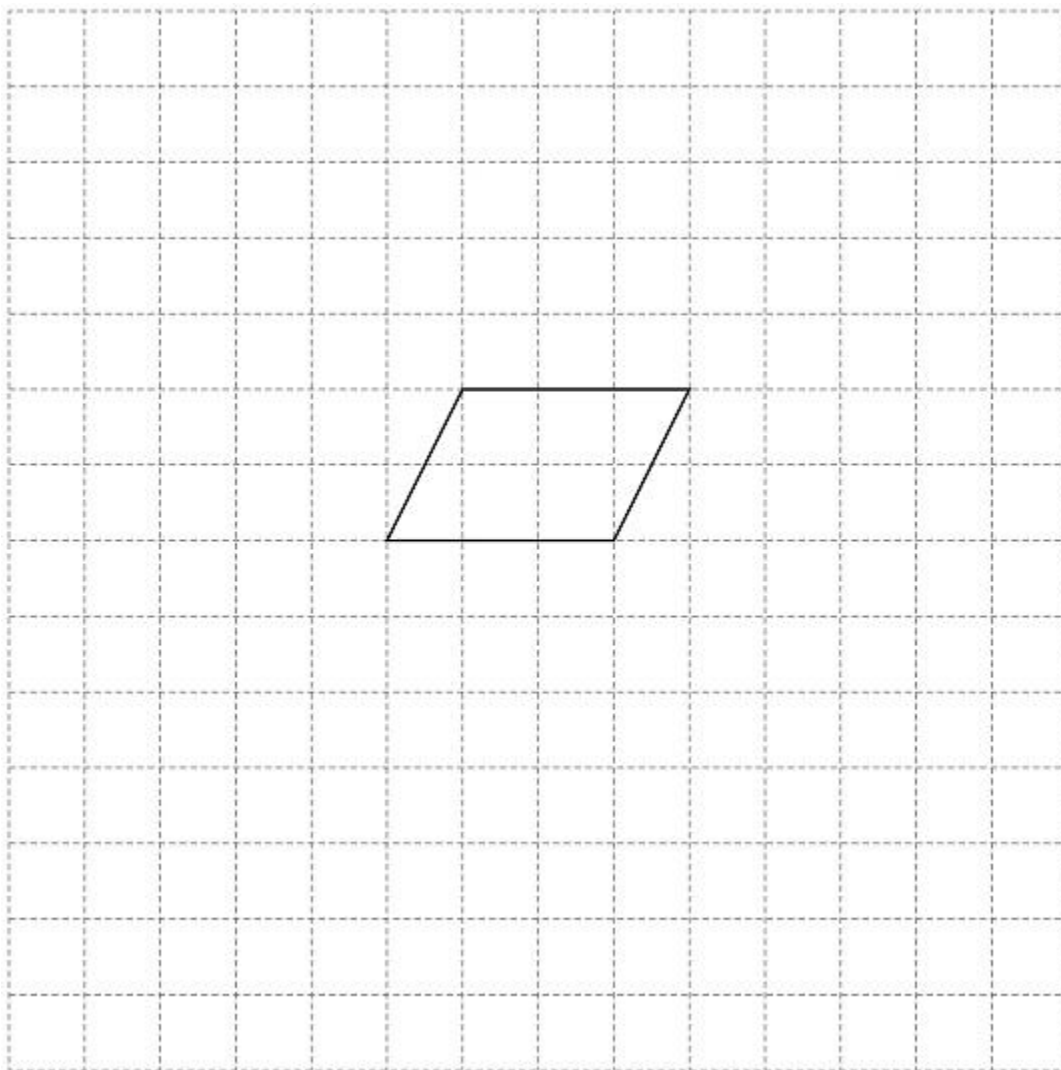
- In all calculations, show clearly how you work out your answer

For questions 1 to 4, you must **NOT** use a calculator.



**Q1.**

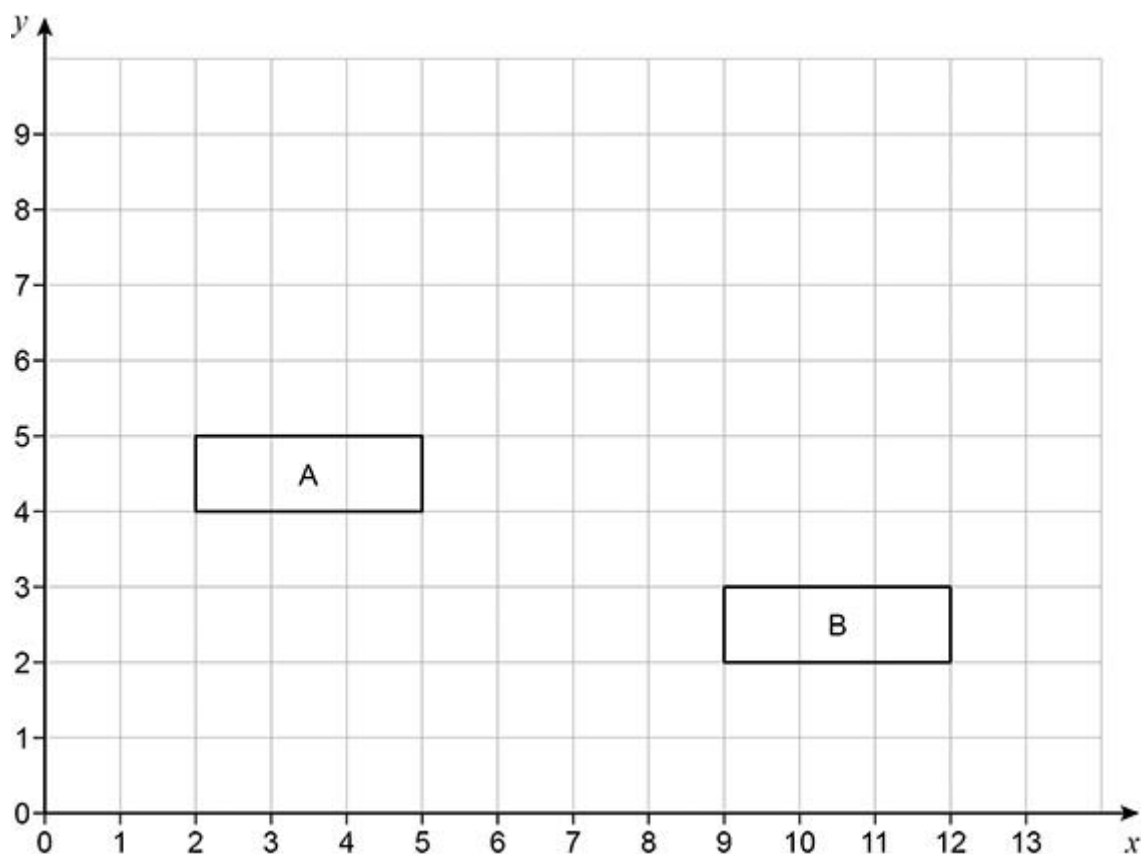
Here is a parallelogram.



The parallelogram is translated 4 squares to the left and 3 squares up.  
Draw the translated parallelogram.

**(Total 2 marks)**

Q2.



Work out the vector that translates shape A to shape B.

Answer  $\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix}$

(Total 2 marks)

Q3.

Circle the vector that translates the point  $(-2, 7)$  to the point  $(3, -1)$

$$\begin{pmatrix} 5 \\ -6 \end{pmatrix}$$

$$\begin{pmatrix} 5 \\ -8 \end{pmatrix}$$

$$\begin{pmatrix} -5 \\ 8 \end{pmatrix}$$

$$\begin{pmatrix} -5 \\ 6 \end{pmatrix}$$

(Total 1 mark)

Q4.

The vector  $\begin{pmatrix} -2 \\ 3 \end{pmatrix}$  translates A to B.

Circle the vector that translates B to A.

$$\begin{pmatrix} -2 \\ 3 \end{pmatrix}$$

$$\begin{pmatrix} -3 \\ 2 \end{pmatrix}$$

$$\begin{pmatrix} 3 \\ -2 \end{pmatrix}$$

$$\begin{pmatrix} 2 \\ -3 \end{pmatrix}$$

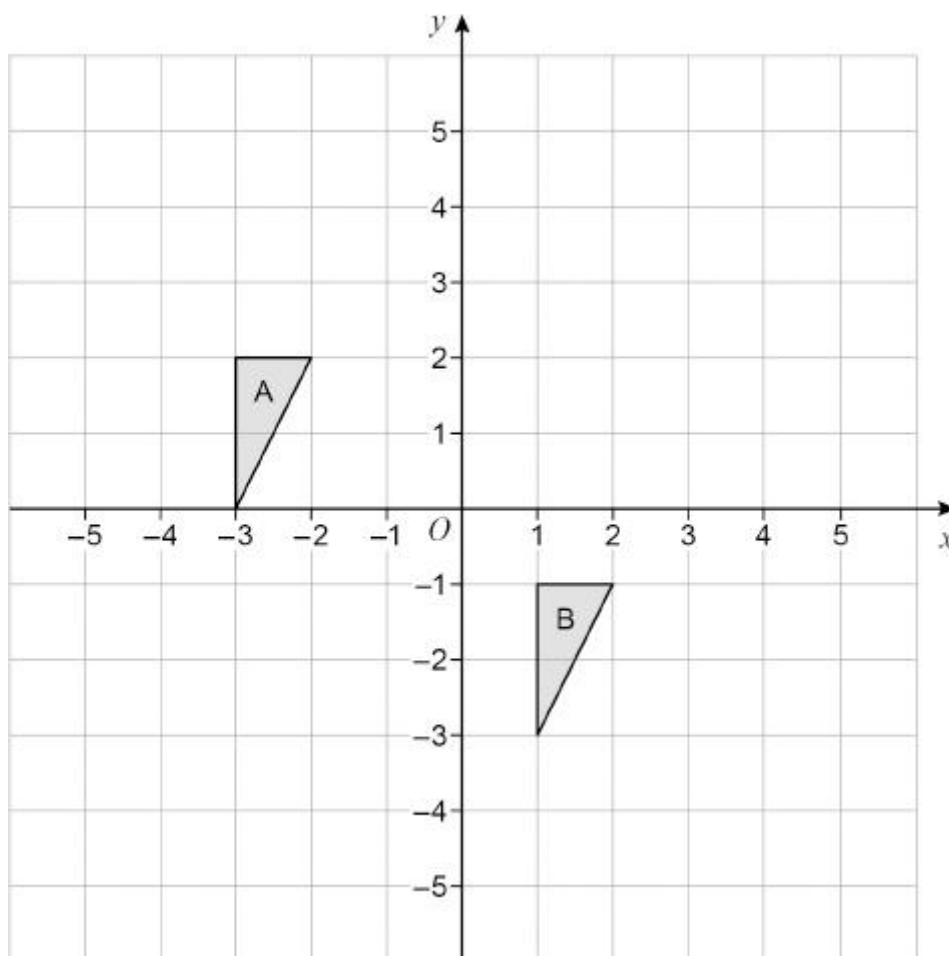
(Total 1 mark)

For the rest of the questions, you may use a calculator.



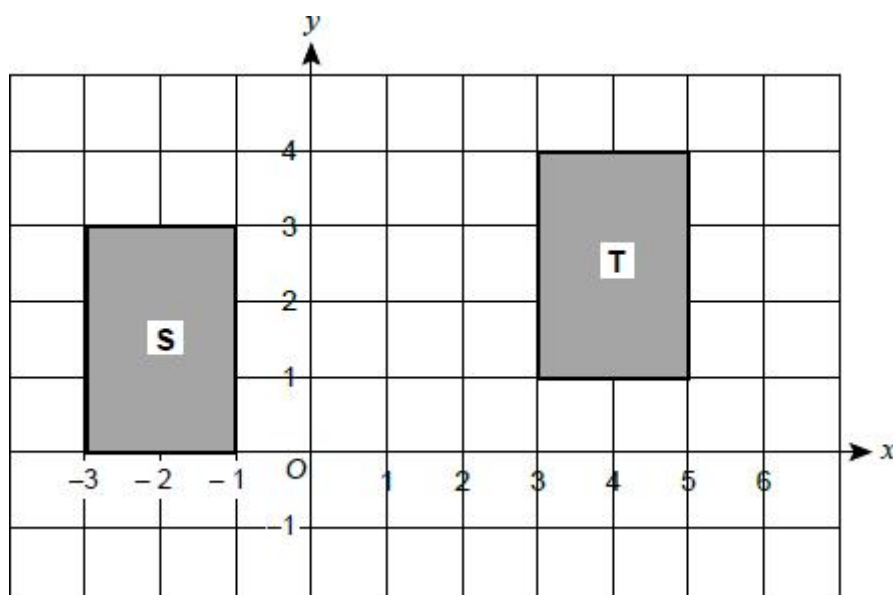
Q5.

Write down the translation vector that maps shape A onto shape B.



(Total 2 marks)

Q6.



Work out the vector that translates shape **S** to shape **T**

(Total 1 mark)

Q7.

A shape is translated by the vector  $\begin{pmatrix} 0 \\ 4 \end{pmatrix}$

In which direction does the shape move?  
Circle your answer.

up

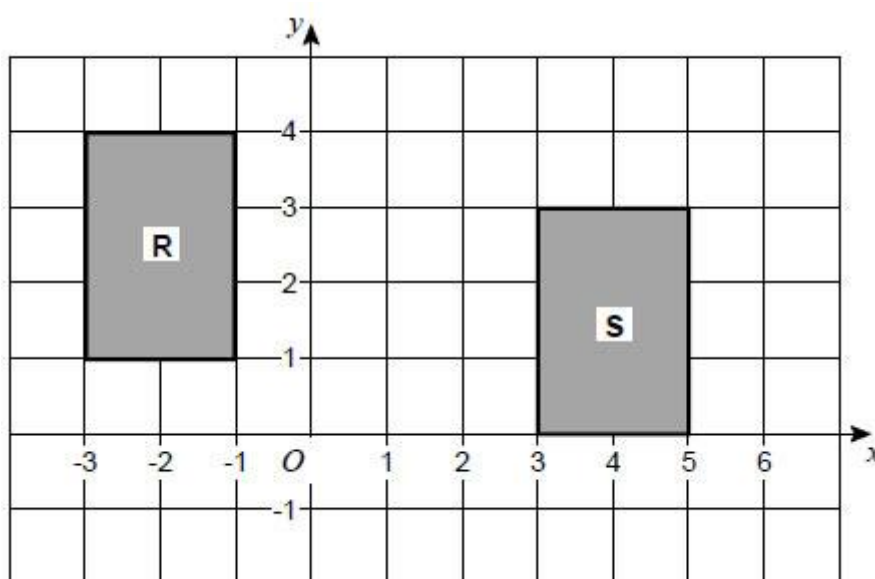
down

left

right

(Total 1 mark)

Q8.



Circle the vector that translates shape **R** to shape **S**.

$$\begin{pmatrix} 1 \\ -6 \end{pmatrix}$$

$$\begin{pmatrix} 6 \\ -1 \end{pmatrix}$$

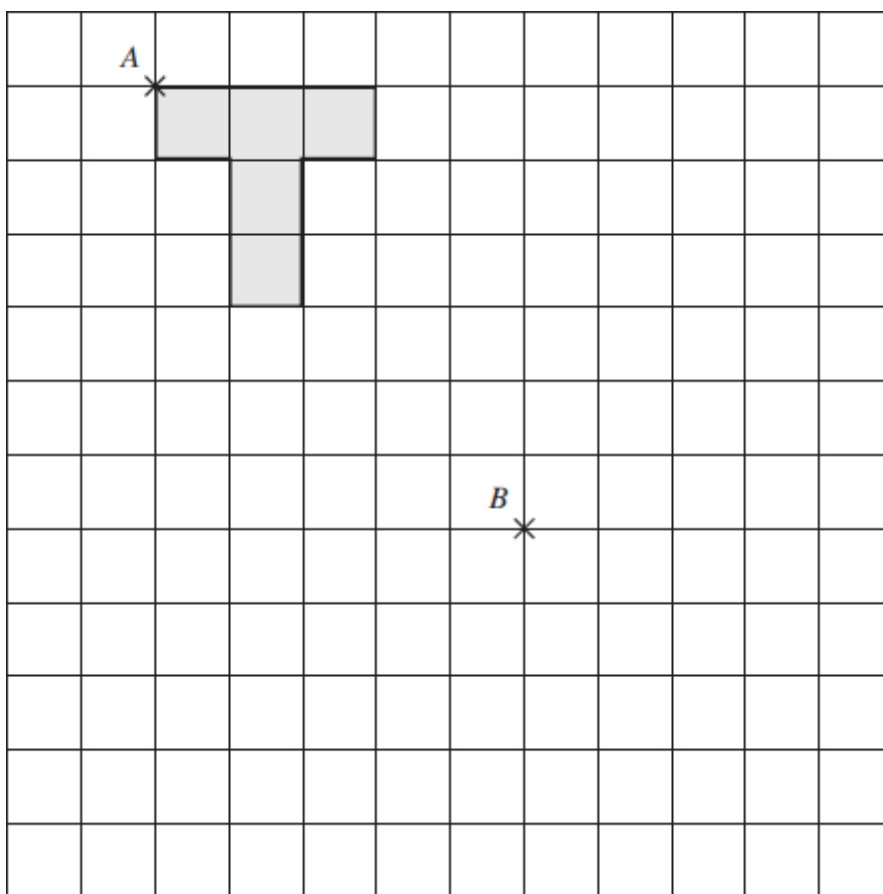
$$\begin{pmatrix} -1 \\ 6 \end{pmatrix}$$

$$\begin{pmatrix} -6 \\ 1 \end{pmatrix}$$

(Total 1 mark)

**Q9.**

- (a) Translate this T-shape so that point *A* moves to point *B*.



- (b) Describe the translation.

(1)

(2)

**(Total 3 marks)**