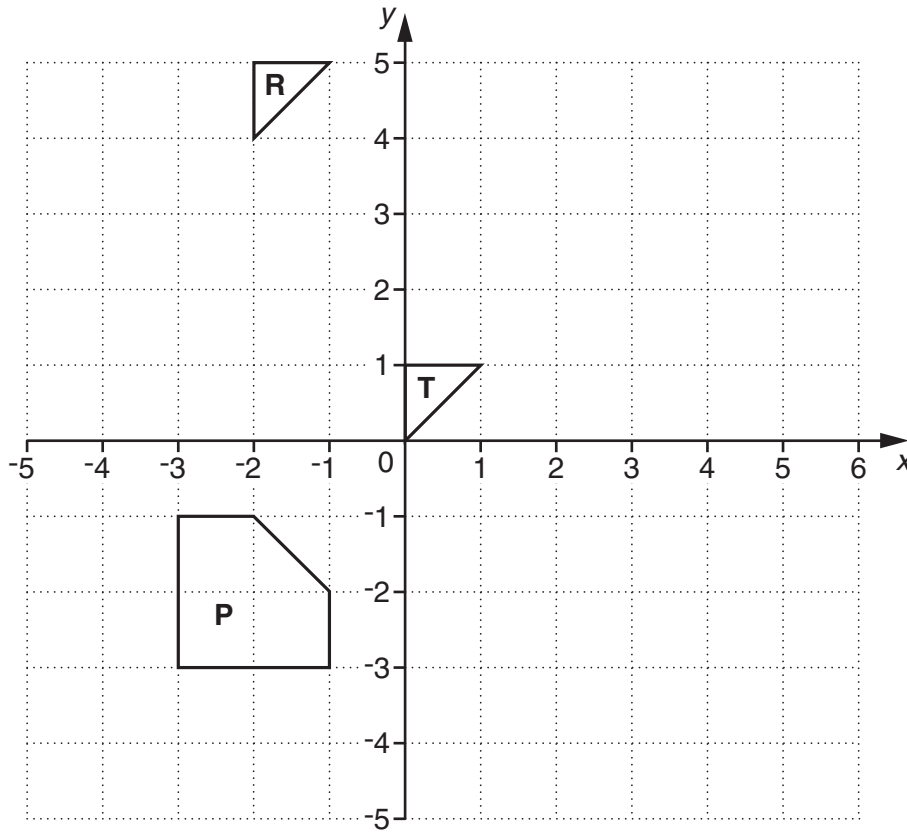


1 Shapes **P**, **R** and **T** are drawn on this grid.



(a) Describe fully the **single** transformation that maps triangle **T** onto triangle **R**.

.....
 [3]

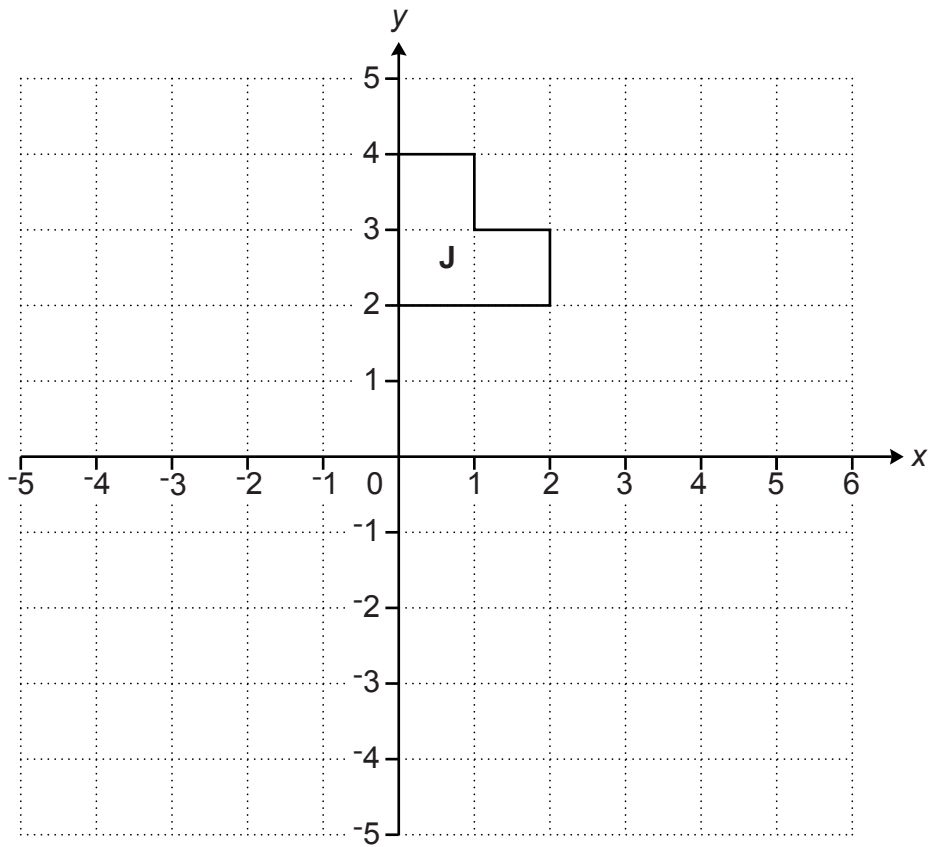
(b) Reflect shape **P** in the line $x = 1$.
 Label your image **B**.

[2]

(c) Enlarge triangle **T** with scale factor 3, centre $(0, 0)$.
 Label your image **C**.

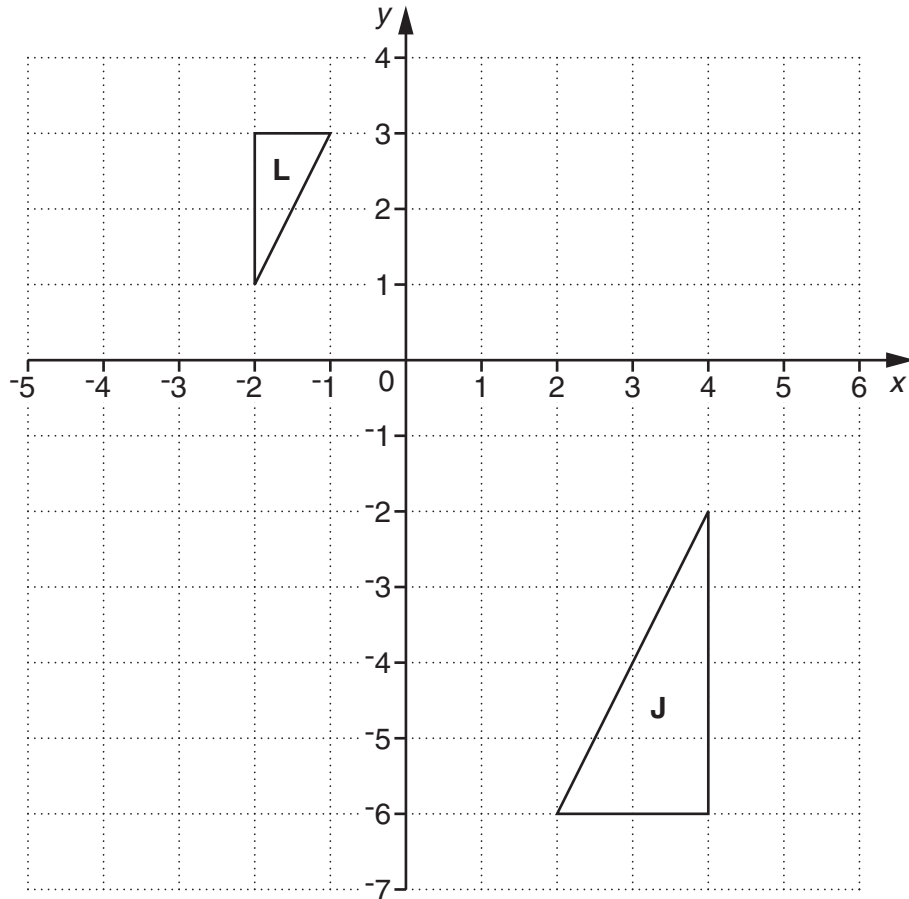
[3]

- 2 Enlarge shape **J** using scale factor -2 and centre $(0, 2)$.
Label your image **K**.



[3]

3 Triangles **J** and **L** are drawn on the grid below.

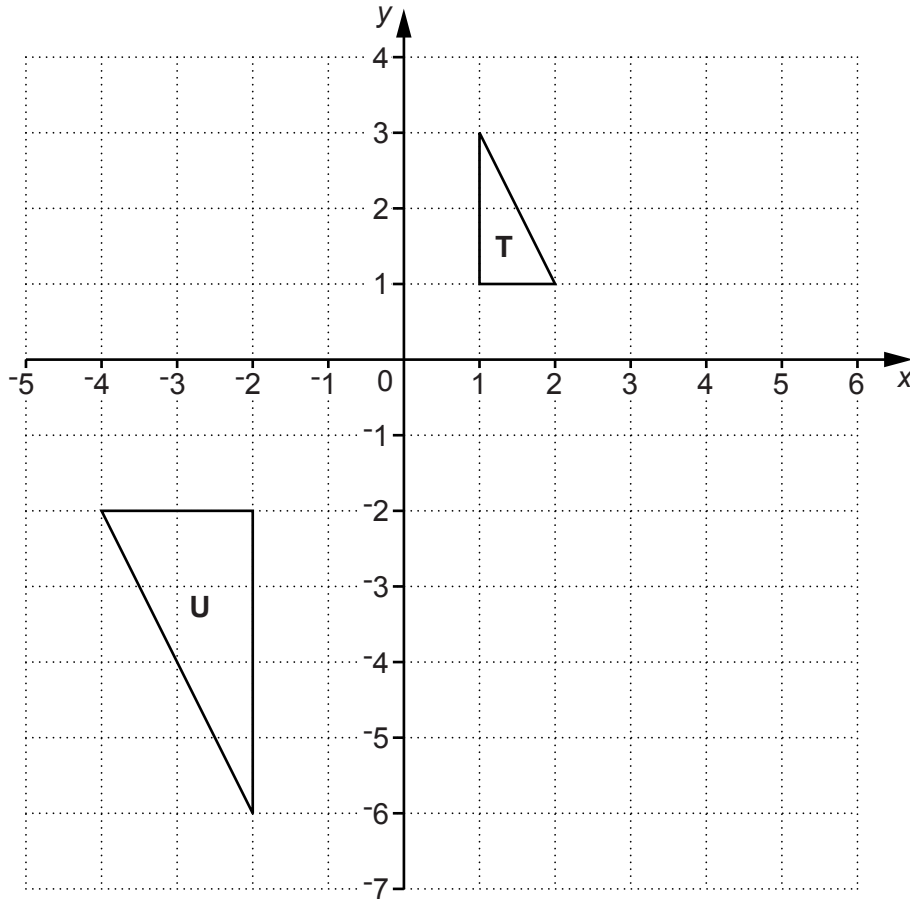


(a) What is the scale factor of the enlargement that maps triangle **L** onto triangle **J**?

(a) _____ [1]

(b) Enlarge triangle **J** with scale factor $\frac{1}{2}$ and centre (4, 4).
Label your image **M**.

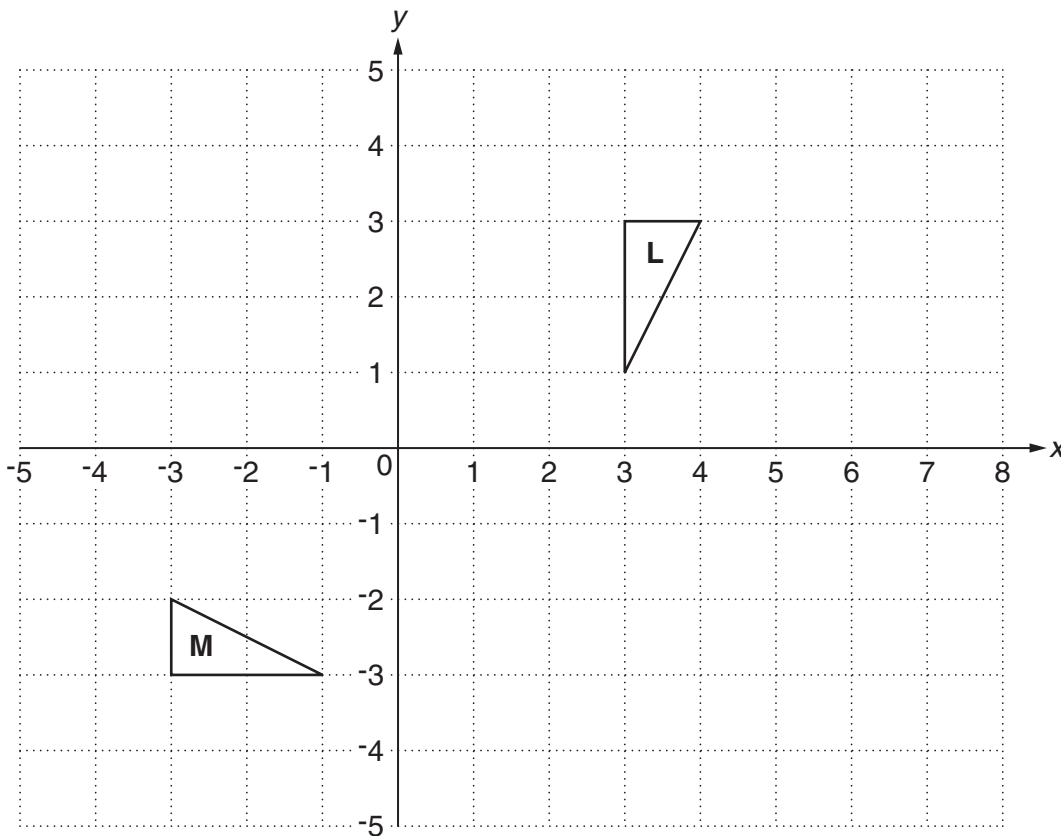
[3]



- (a) Rotate triangle **T** 90° clockwise about the origin.
Label your image **A**. [3]
- (b) Reflect triangle **T** in the line $y = -1$.
Label your image **B**. [2]
- (c) Describe fully the enlargement that maps triangle **T** onto triangle **U**.

[2]

5 Triangles **L** and **M** are drawn on the grid below.



(a) Describe fully the **single** transformation that maps triangle **L** onto triangle **M**.

.....
 [3]

(b) Translate triangle **L** using the vector $\begin{pmatrix} 2 \\ -4 \end{pmatrix}$. Label your image **T**. [2]

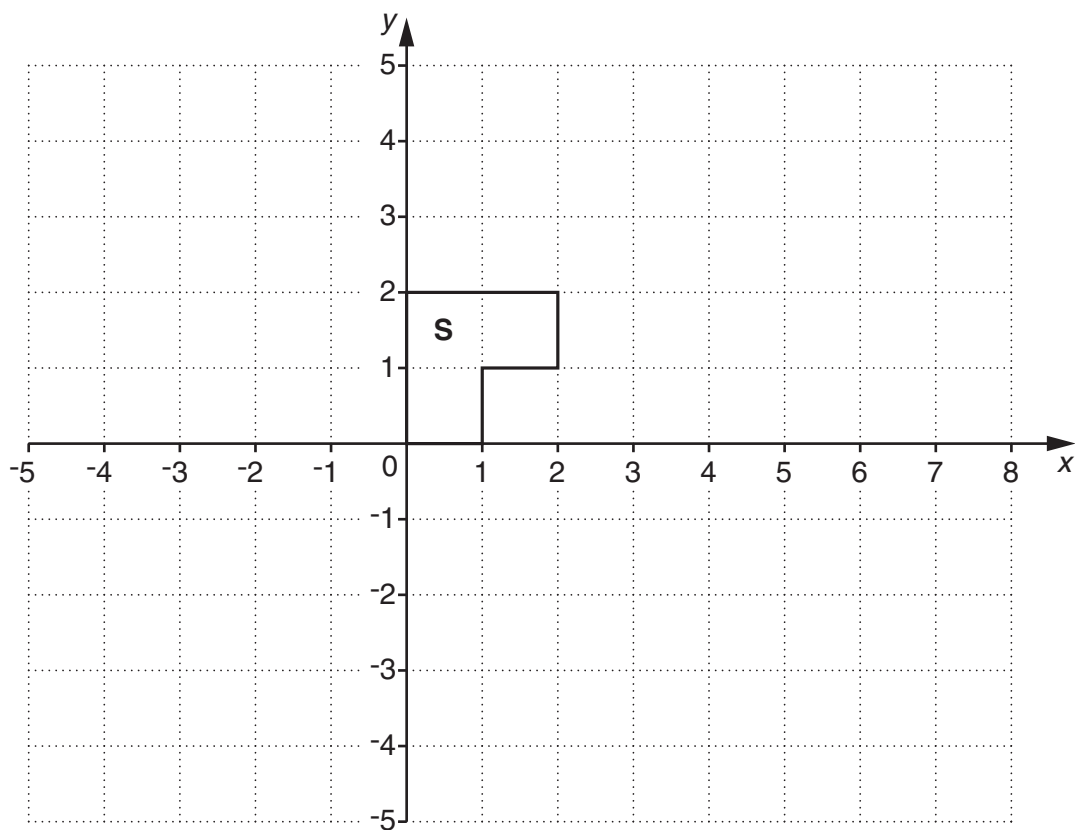
(c) With the transformations in (a) and (b) both the lengths *and* the angles in the image are the same as in the original shape.

Describe what would happen to the lengths and angles of triangle **L** after an enlargement of scale factor 4.

.....

 [2]

6 Shape **S** is shown on the grid.



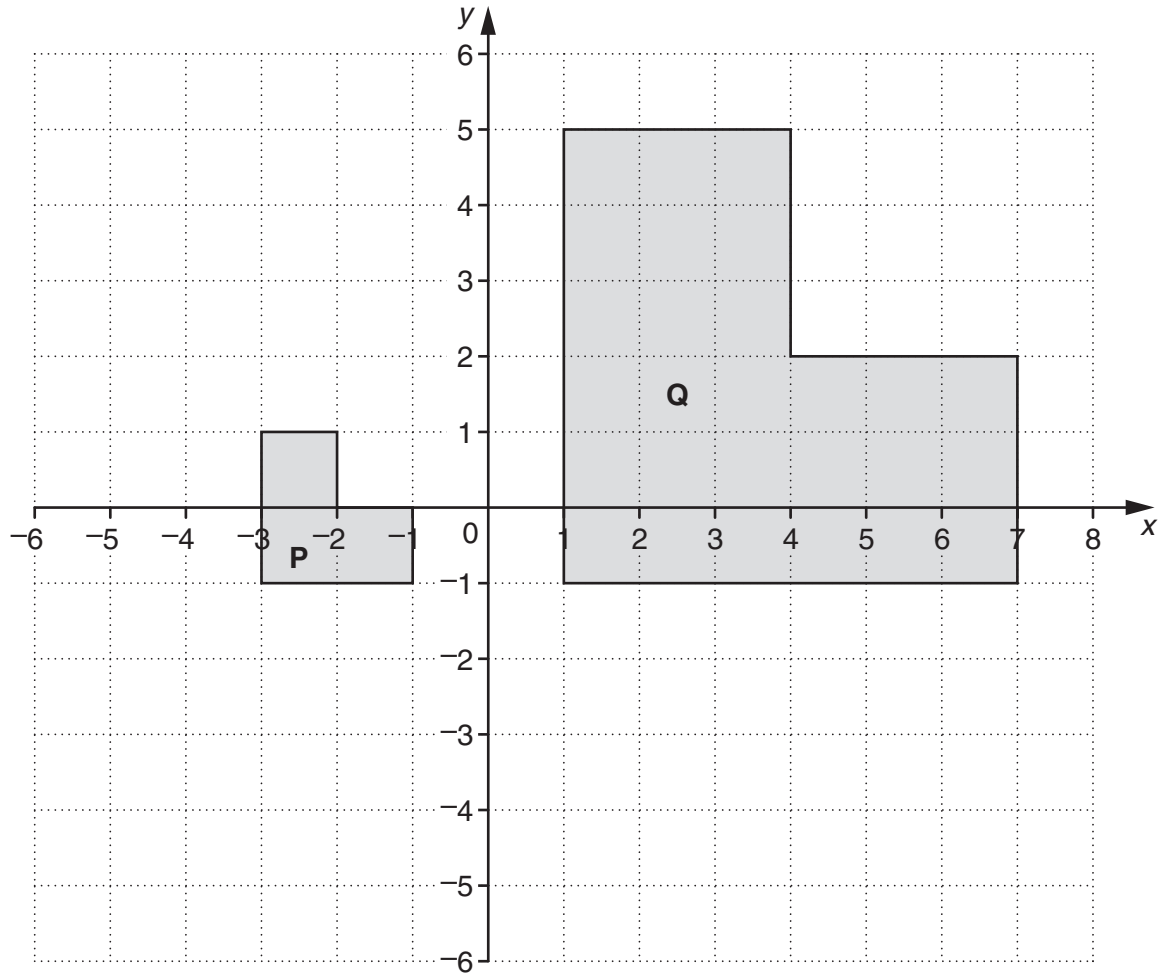
(a) Rotate shape **S** through 90° clockwise about $(2, 0)$.
Label your image **R**.

[3]

(b) Enlarge shape **S** with scale factor -2 and centre $(0, 0)$.
Label your image **E**.

[2]

7



(a) Describe fully the **single** transformation that maps shape **P** onto shape **Q**.

[3]

(b) Rotate shape **P** 180° about the point $(-2, -2)$.
Label the image **R**.

[2]