DESCRIBING TRANSFORMATIONS

GRADE 4

Examination practice questions

You should have:

A ruler, protractor, compasses, a pen, pencil, eraser, calculator.
For some questions, you may need tracing paper.

Instructions

- Use **black** ink or ball-point pen.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

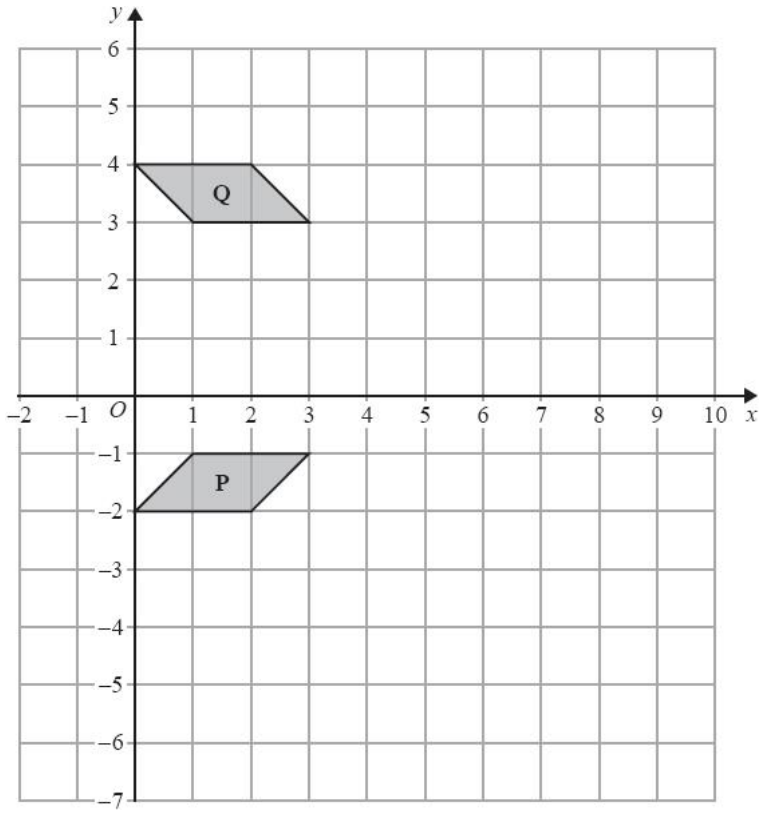
Information

- The marks for each question are shown in brackets.
- If the number of marks for two similar questions isn't the same, this is likely due to them being modelled on different specifications. In this case, it is worth considering both mark schemes.
- Use the number of marks for each question as a guide as to how much time to spend on each question. As a rough guide, you can multiply the number of marks by 1.2 to see how many minutes you should spend on a question.
- Questions will generally get more challenging as the document progresses. Some of the latter questions will go beyond the core grade level for this topic.

Advice

- Read each question carefully before you start to answer it.
- Don't forget to have fun.
- Check your answers at the end.

Q1. AtoZrevision.com



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

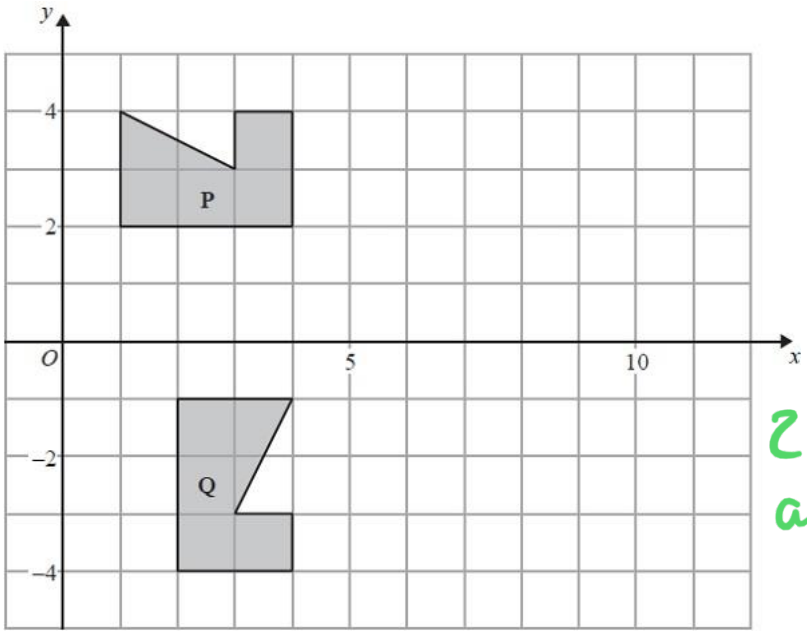
B1

Reflection in the line y = 1

B1

(2 marks)

Q2. AtoZrevision.com



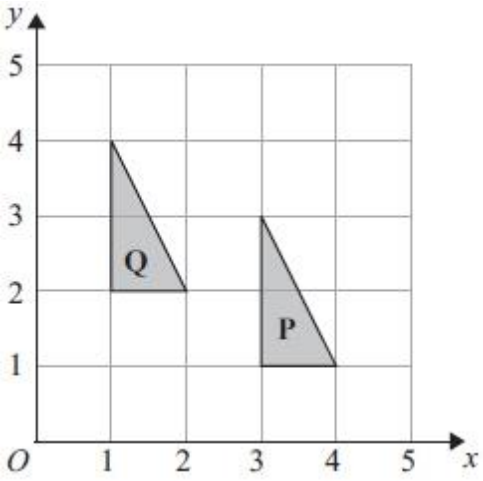
OR
270° anticlockwise

Describe fully the single transformation which maps shape **P** onto shape **Q**.

Rotation B1 90° clockwise B1
Centre (0,0) or Origin
B1

(3 marks)

Q3. AtoZrevision.com

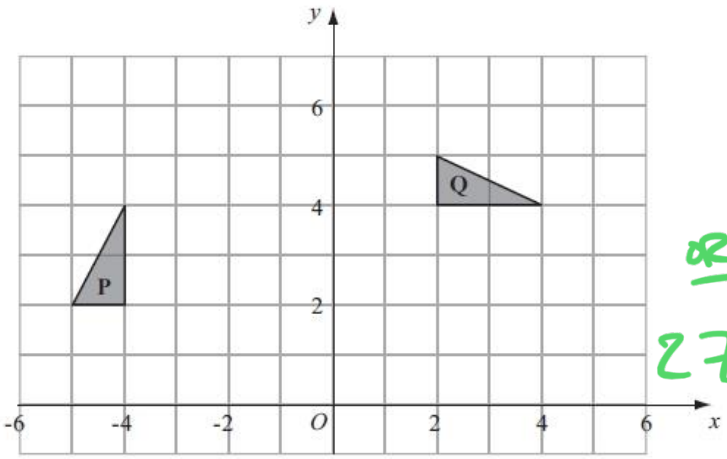


Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

Translation by the vector $\begin{pmatrix} -2 \\ 1 \end{pmatrix}$
B1 B1

(2 marks)

Q4. AtoZrevision.com



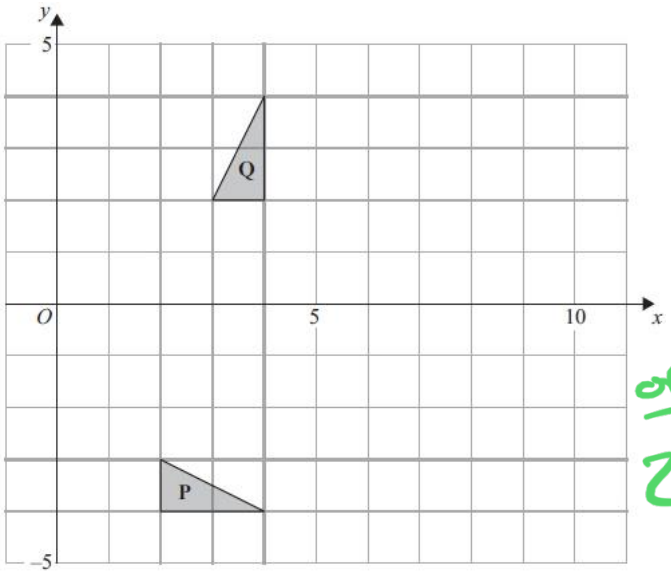
OR
270° anticlockwise

Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

Rotation 90° clockwise
B1 about (0,0) B1
B1 or the origin

(3 marks)

Q5. AtoZrevision.com



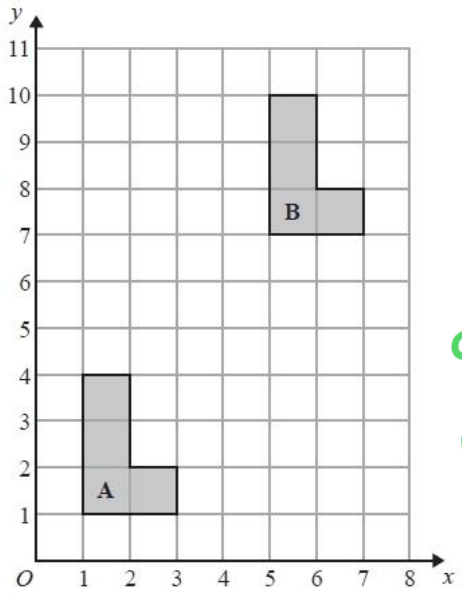
OR
270° clockwise

Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

Rotation 90° anticlockwise
B1 about (0,0) B1
B1 OR The origin

(3 marks)

Q6. AtoZrevision.com



or by the vector $\begin{pmatrix} 4 \\ 6 \end{pmatrix}$

Describe fully the single transformation that maps shape **A** onto shape **B**.

Translation — B1

4 right, 6 up — B1

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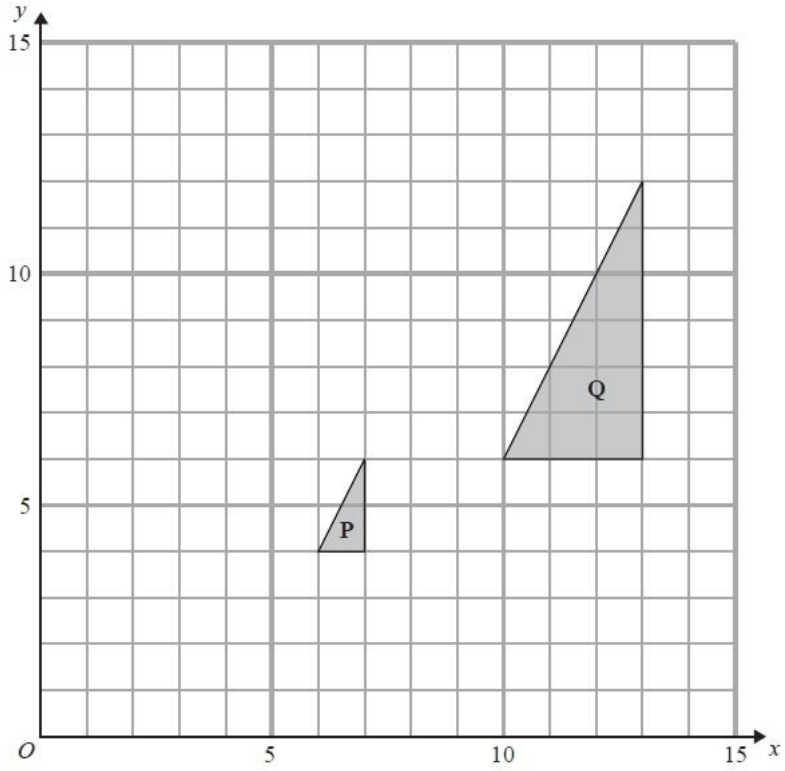
(2 marks)



Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

Enlargement B1

S.F. 3 B1

C.O.E. (4, 3) B1

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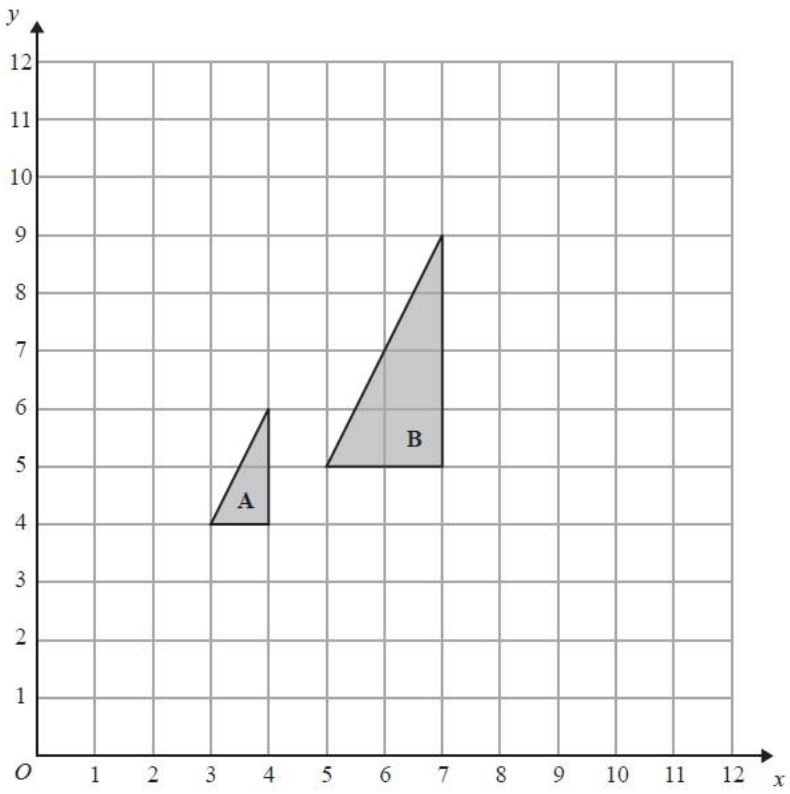
.....

(3 marks)

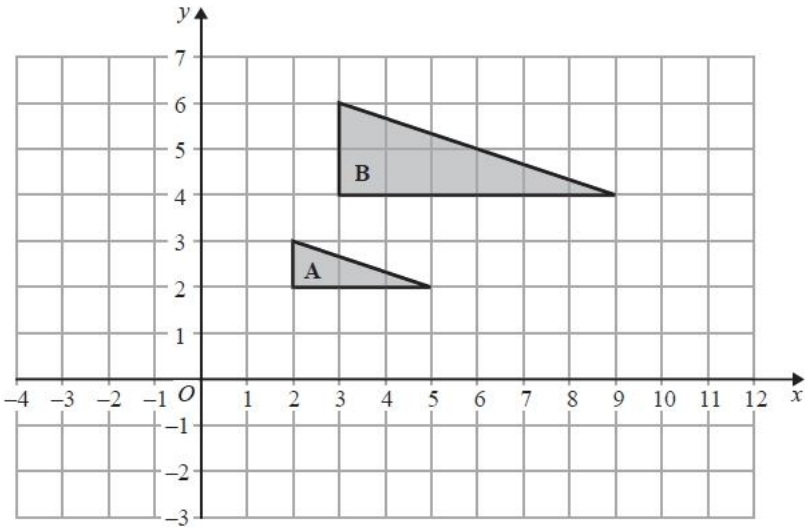


Describe fully the single transformation that maps triangle **A** onto triangle **B**.

Enlargement B1 S.F. 2 B1 C.O.E (1, 3) B1

(3 marks)

Q9. AtoZrevision.com



Describe fully the single transformation that maps triangle **A** onto triangle **B**.

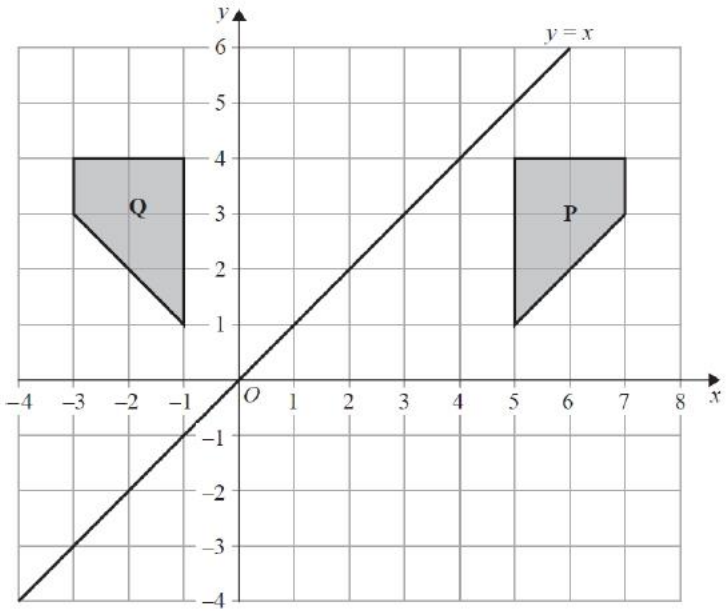
Enlargement B1

S.F. 2 B1

C.O.E. (1, 0) B1

(3 marks)

Q10. AtoZrevision.com

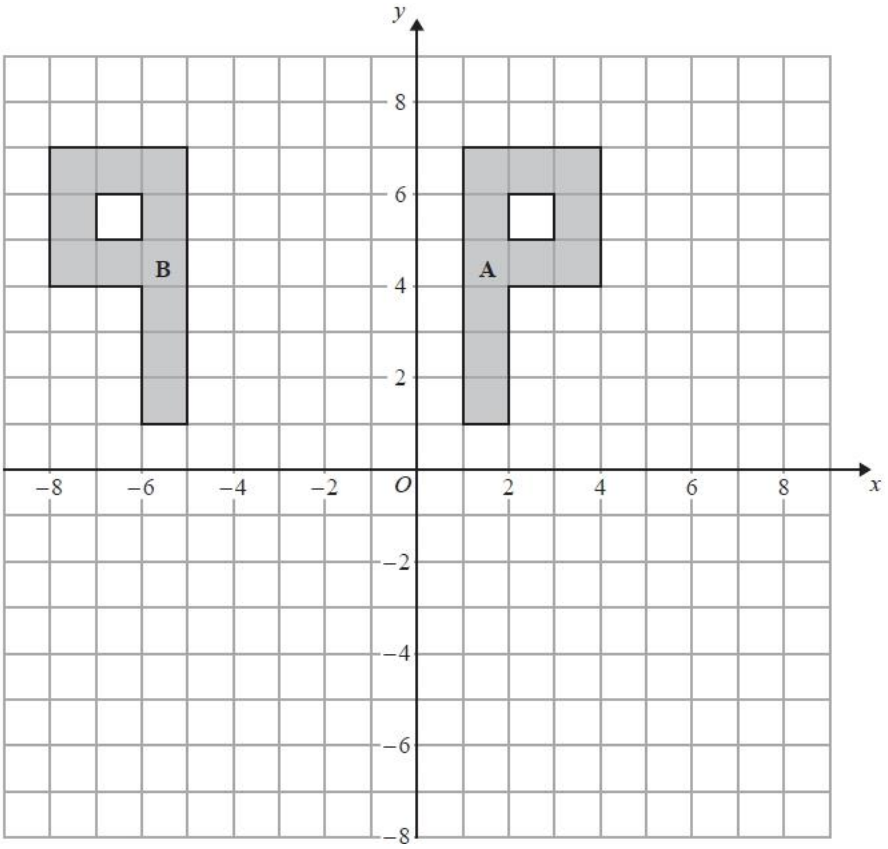


Describe fully the single transformation which maps shape **P** onto shape **Q**.

Reflection in the line x = 2

B1 B1

(2 marks)



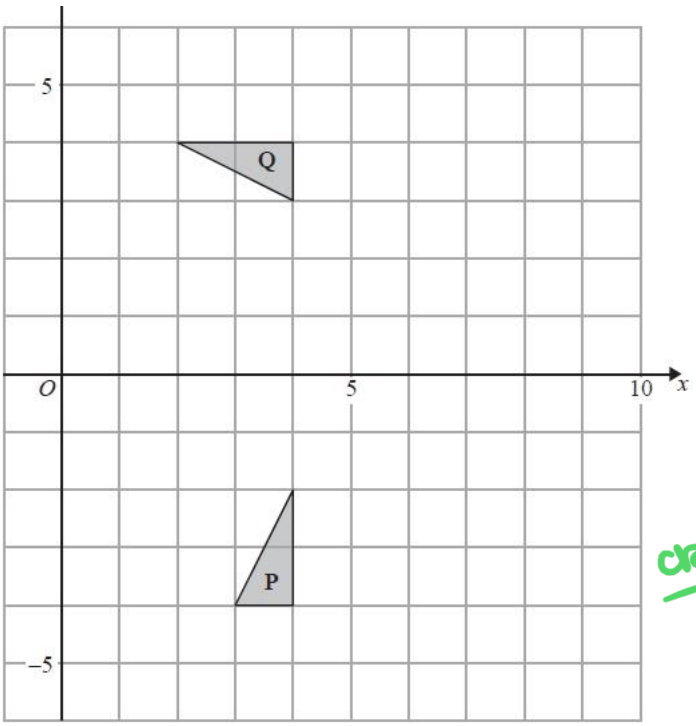
Describe fully the single transformation that maps shape **A** onto shape **B**.

Reflection in the line $x = -2$

B1 B1

(2 marks)

Q12. AtoZrevision.com



OR 270° clockwise

Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

Rotation B1

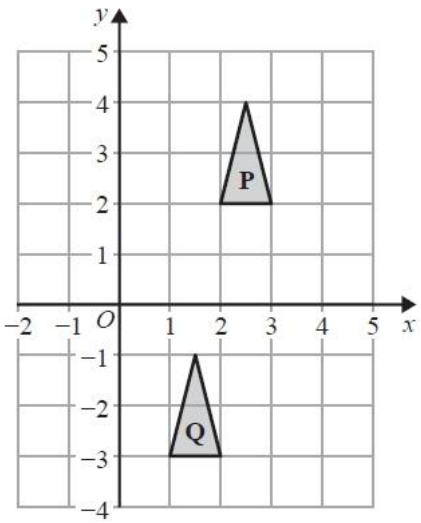
90° anticlockwise B1

about (0,0) B1

OR The origin

(3 marks)

Q13. AtoZrevision.com



OR 1 left 5 down

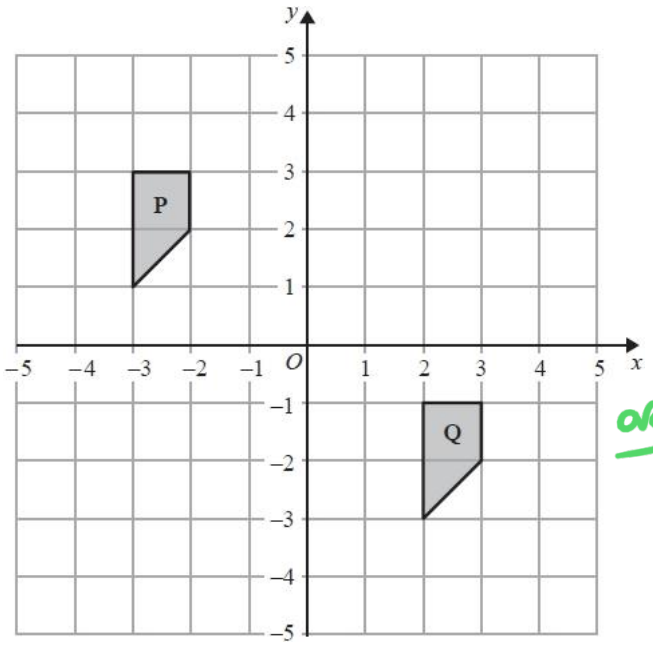
Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

Translation B1

by the vector $\begin{pmatrix} -1 \\ -5 \end{pmatrix}$ B1

(2 marks)

Q14. AtoZrevision.com



or 5 right 4 down

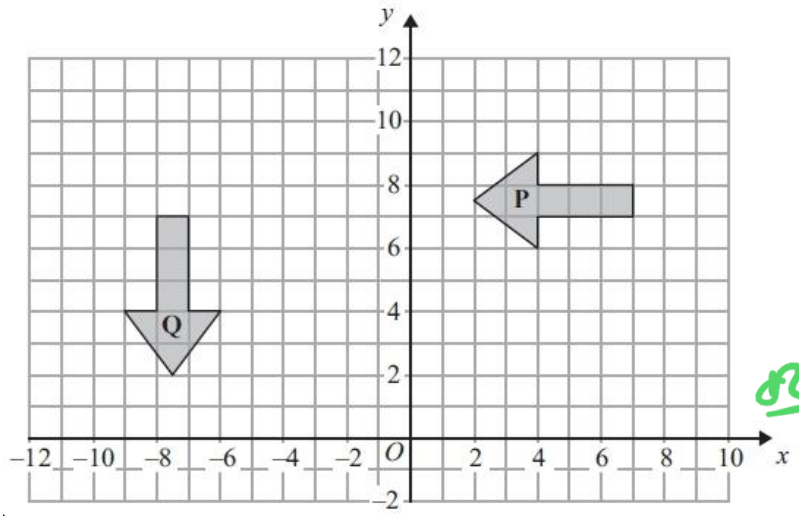
Describe fully the single transformation that maps shape **P** onto shape **Q**.

Translation by the vector $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$

B1 B1

(2 marks)

Q15. AtoZrevision.com



B1 270° clockwise

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

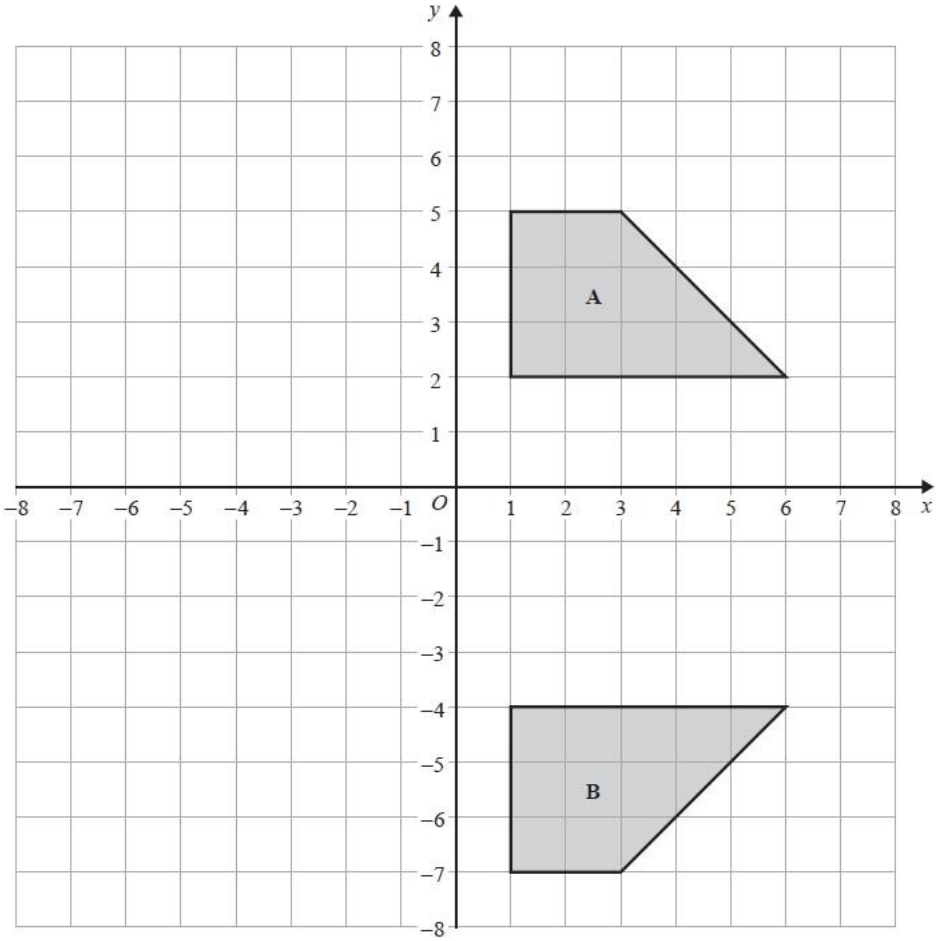
Rotation 90° anticlockwise about (0,0)

B1 B1 B1

↳ or the origin

(3 marks)

Q16. AtoZrevision.com

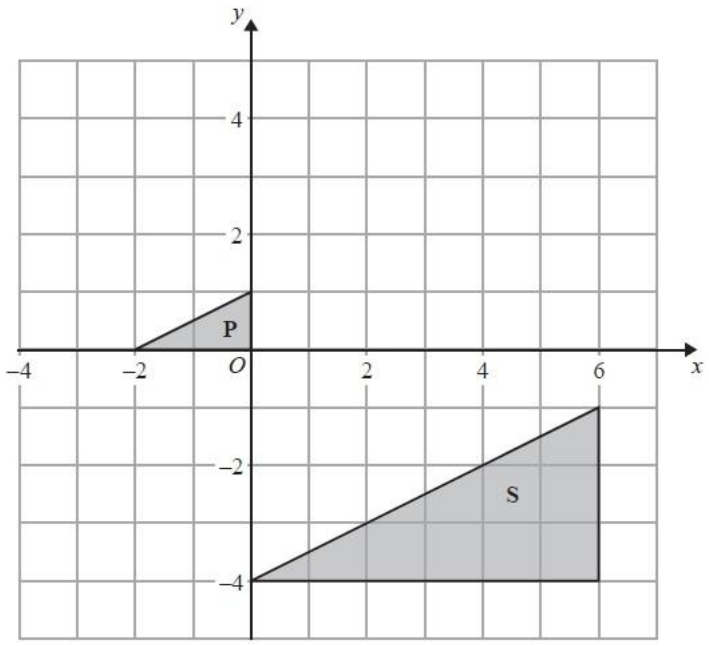


Describe fully the single transformation that maps shape **A** onto shape **B**.

Reflection in the line y = -1

B1 B1

(2 marks)



Describe fully the single transformation that maps triangle **P** onto triangle **S**.

Enlargement B1

S.F. 3 B1

C.O.E. (−3, 2) B1

.....

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(3 marks)