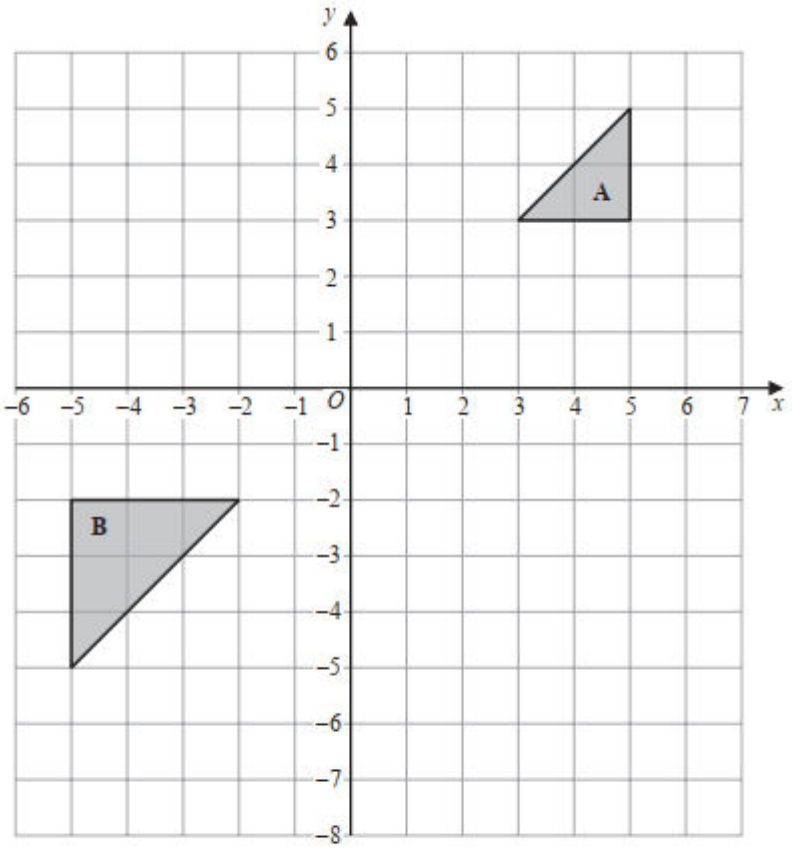
TRANSFORMATIONS

Pearson Edexcel – Thursday 4 June 2020 - Paper 2 (Calculator) Higher Tier

1.

15



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

.....

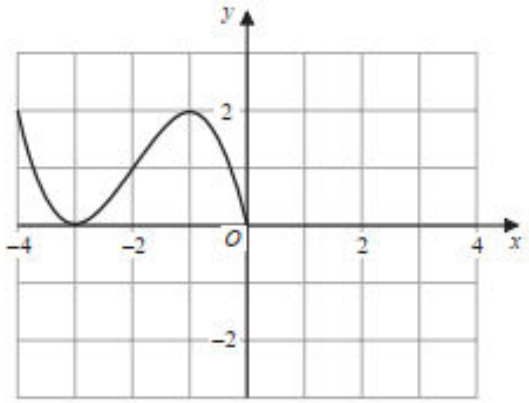
.....

(Total for Question 15 is 2 marks)

Pearson Edexcel – Thursday 4 June 2020 - Paper 2 (Calculator) Higher Tier

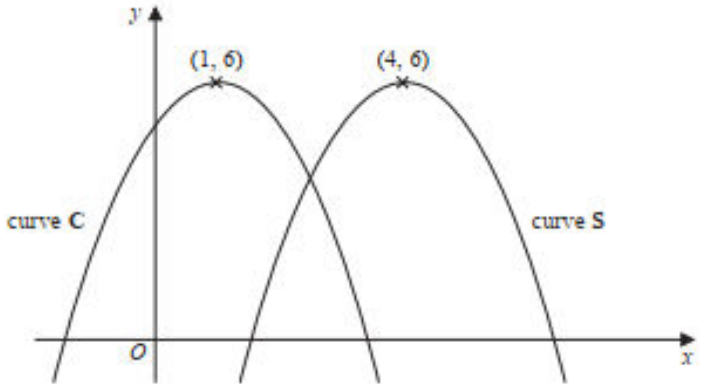
2.

21 The graph of the curve with equation $y = f(x)$ is shown on the grid below.



(a) On the grid above, sketch the graph of the curve with equation $y = f(-x)$

(2)



The curve **C** with equation $y = 5 + 2x - x^2$ is transformed by a translation to give the curve **S** such that the point (1, 6) on **C** is mapped to the point (4, 6) on **S**.

(b) Find an equation for **S**.

.....

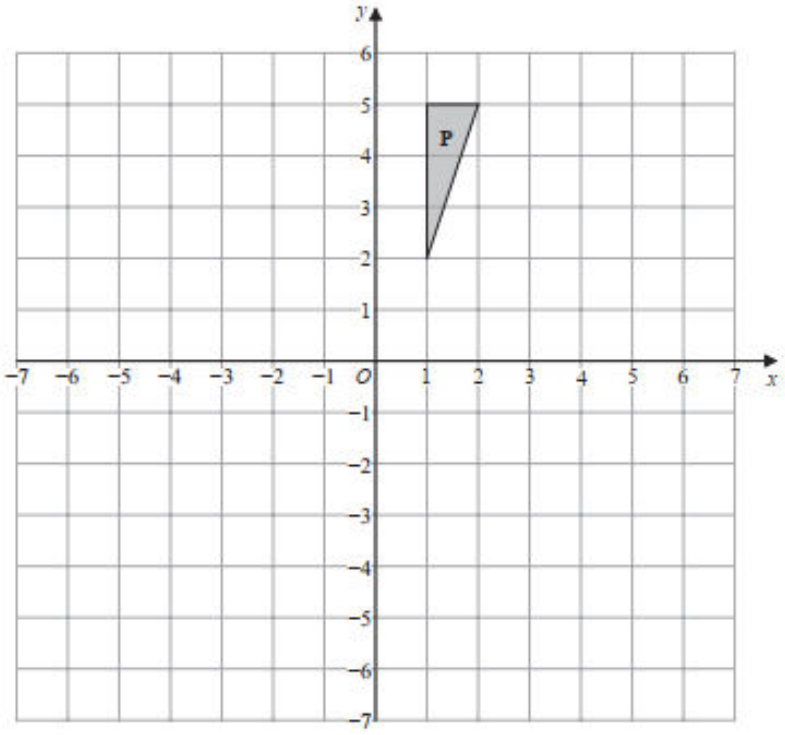
(2)

(Total for Question 21 is 4 marks)

Pearson Edexcel – Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier

3.

11 The diagram shows a triangle **P** on a grid.



Triangle **P** is rotated 180° about (0, 0) to give triangle **Q**.

Triangle **Q** is translated by $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$ to give triangle **R**.

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

.....

.....

(3)

Under the transformation that maps triangle **P** onto triangle **R**, the point A is invariant.

(b) Write down the coordinates of point A.

(..... , ...)

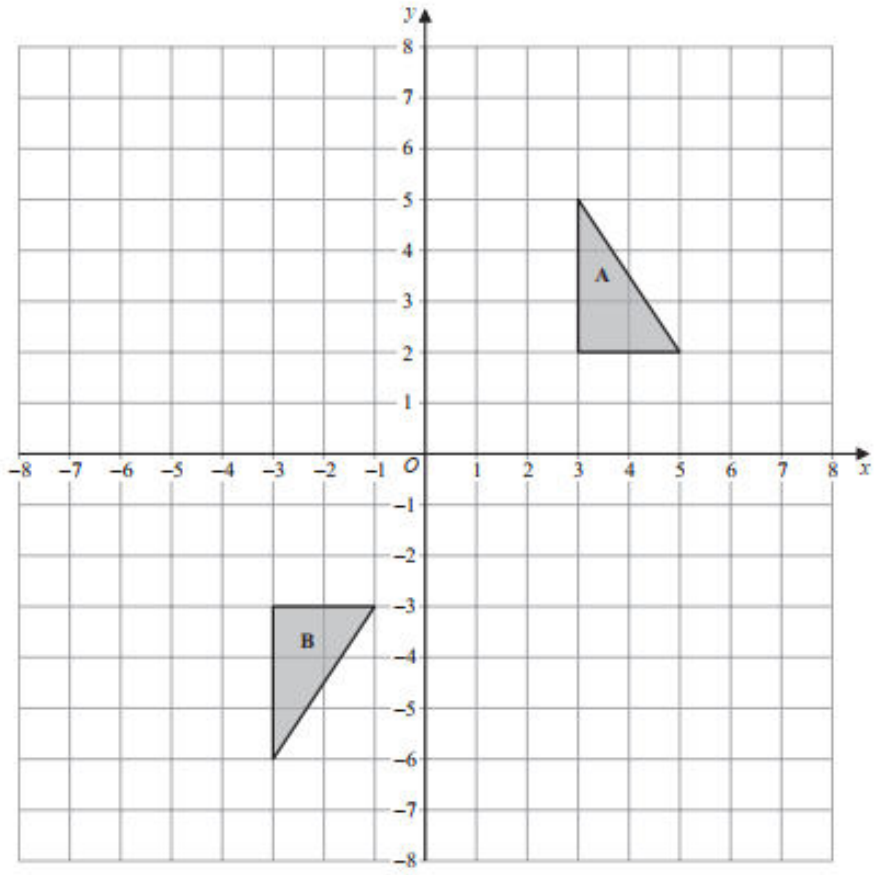
(1)

(Total for Question 11 is 4 marks)

Pearson Edexcel - Tuesday 21 May 2019 - Paper 1 (Non-Calculator) Higher Tier

4.

5



Shape **A** can be transformed to shape **B** by a reflection in the x-axis followed by a translation $\begin{pmatrix} c \\ d \end{pmatrix}$

Find the value of c and the value of d.

$c =$ .....

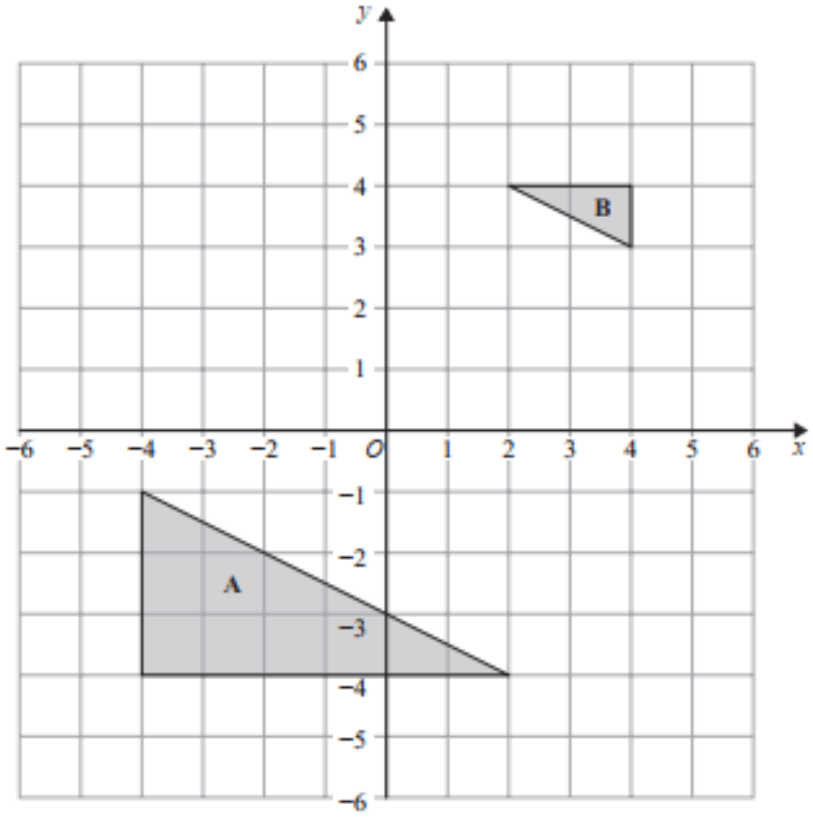
$d =$ .....

(Total for Question 5 is 3 marks)

Pearson Edexcel - Tuesday 6 November 2018 - Paper 1 (Non-Calculator) Higher Tier

5.

13



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

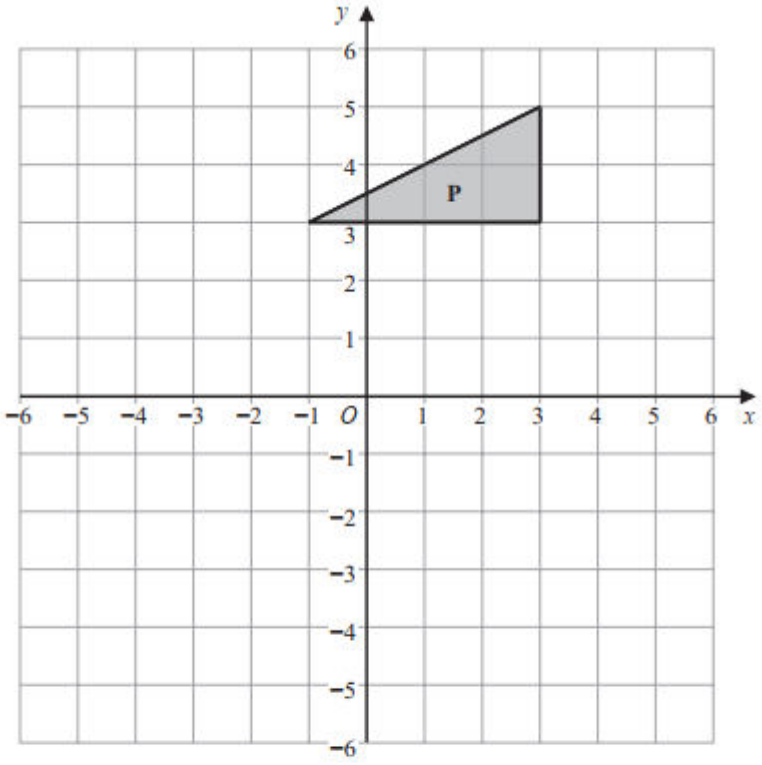
.....

(Total for Question 13 is 2 marks)

Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Higher Tier

6.

8



Triangle **P** is reflected in the line $y = -x$ to give triangle **Q**.
Triangle **Q** is reflected in the line $x = -1$ to give triangle **R**.

Describe fully the single transformation that maps triangle **R** to triangle **P**.

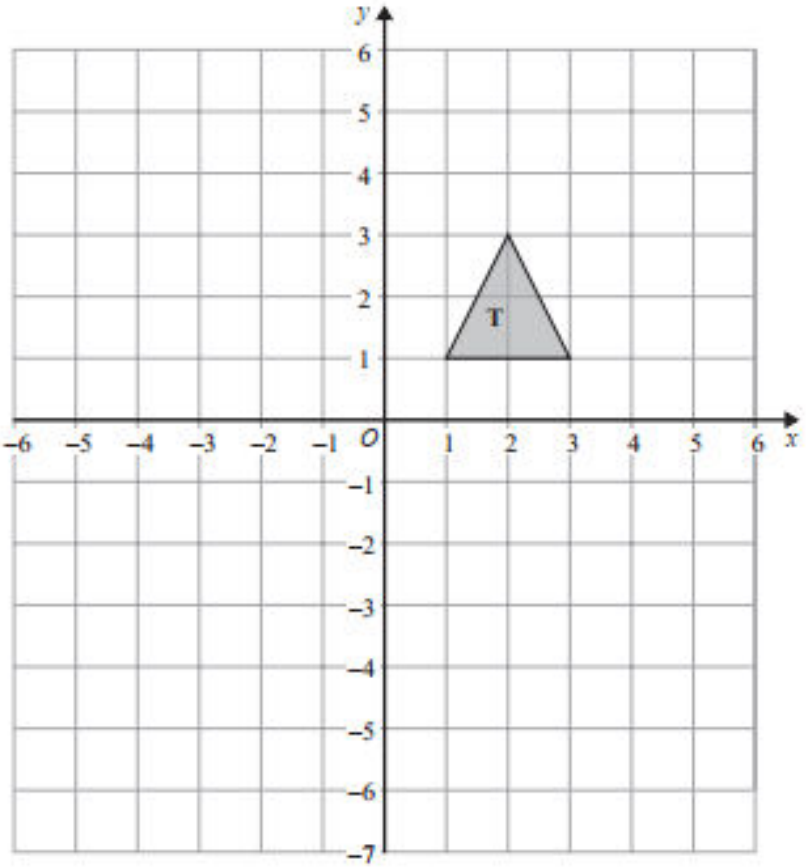
.....

(Total for Question 8 is 3 marks)

Pearson Edexcel - Thursday 24 May 2018 - Paper 1 (Non-Calculator) Higher Tier

7.

7



Shape **T** is reflected in the line $x = -1$ to give shape **R**.
Shape **R** is reflected in the line $y = -2$ to give shape **S**.

Describe the **single** transformation that will map shape **T** to shape **S**.

.....

.....

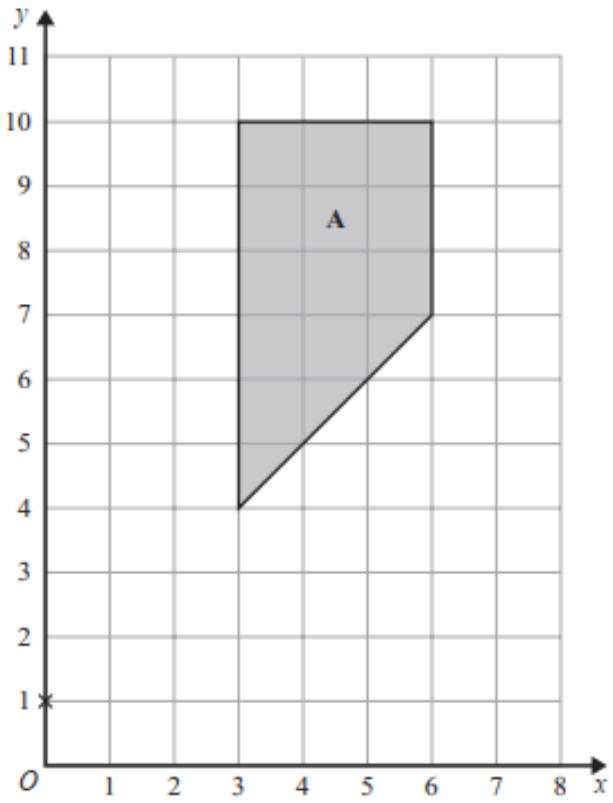
.....

(Total for Question 7 is 2 marks)

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier

8.

7



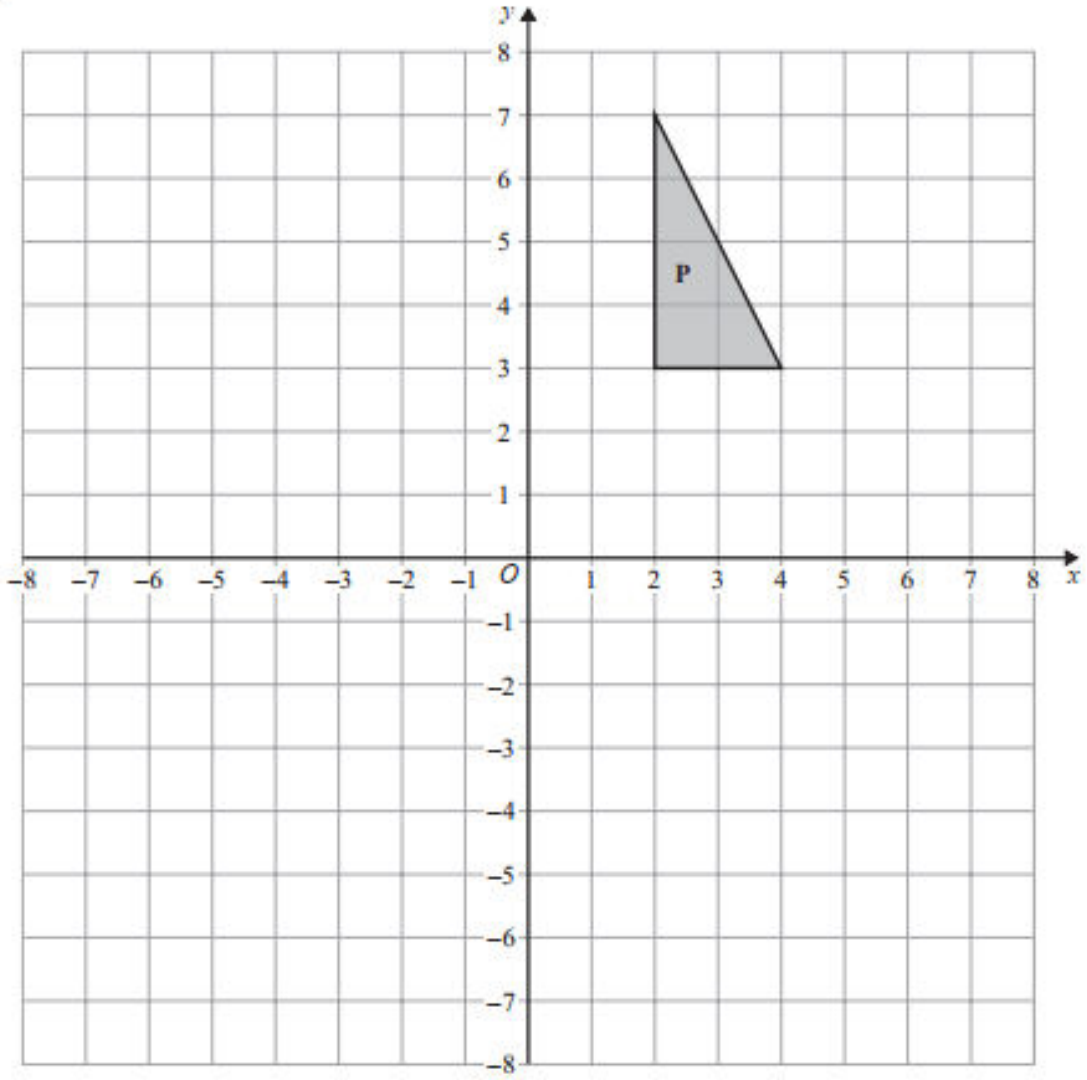
Enlarge shape **A** by scale factor $\frac{1}{3}$ centre (0, 1)

(Total for Question 7 is 2 marks)

Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Higher Tier

9.

18



Enlarge shape **P** by scale factor $-\frac{1}{2}$ with centre of enlargement (0, 0).

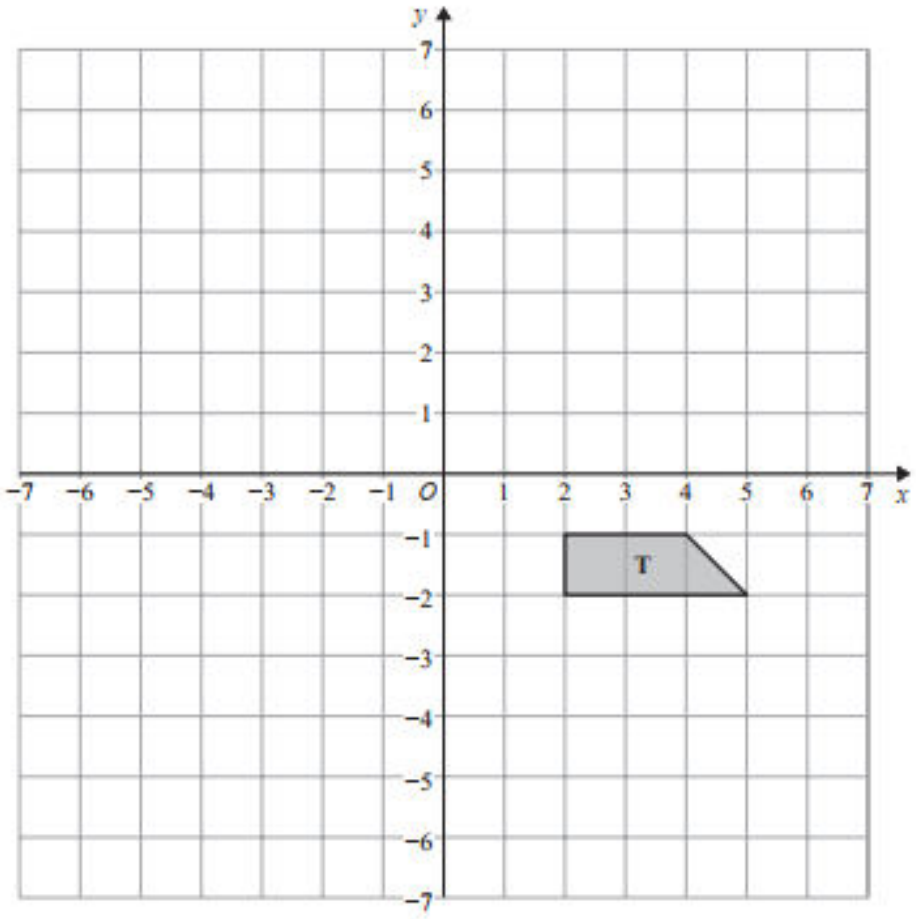
Label your image **Q**.

(Total for Question 18 is 2 marks)

Pearson Edexcel - Monday 6 November 2017 - Paper 2 (Calculator) Higher Tier

10.

5



(a) Rotate trapezium **T** 180° about the origin.
Label the new trapezium **A**.

(1)

(b) Translate trapezium **T** by the vector $\begin{pmatrix} -1 \\ -3 \end{pmatrix}$
Label the new trapezium **B**.

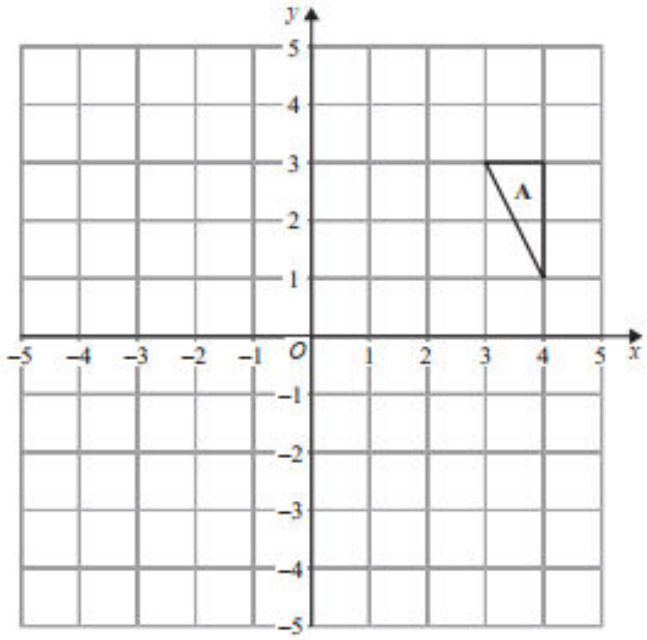
(1)

(Total for Question 5 is 2 marks)

Pearson Edexcel - Thursday 8 June 2017 - Paper 2 (Calculator) Higher Tier

11.

9 The diagram shows triangle **A** drawn on a grid.



Kyle reflects triangle **A** in the x-axis to get triangle **B**.
He then reflects triangle **B** in the line $y = x$ to get triangle **C**.

Amy reflects triangle **A** in the line $y = x$ to get triangle **D**.
She is then going to reflect triangle **D** in the x-axis to get triangle **E**.

Amy says that triangle **E** should be in the same position as triangle **C**.

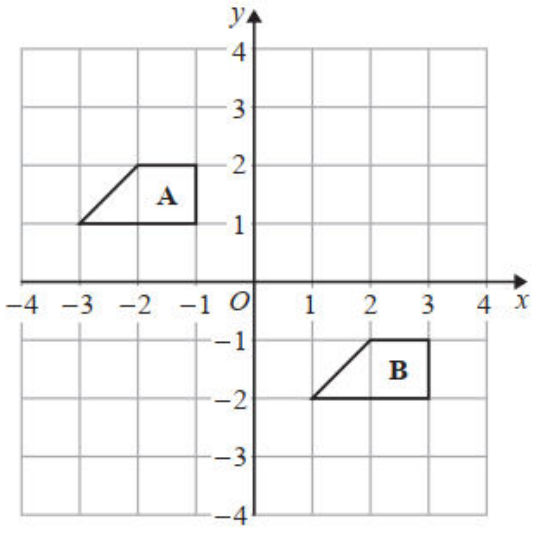
Is Amy correct?
You must show how you get your answer.

(Total for Question 9 is 3 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 2 (Calculator) Higher Tier

12.

1



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

.....

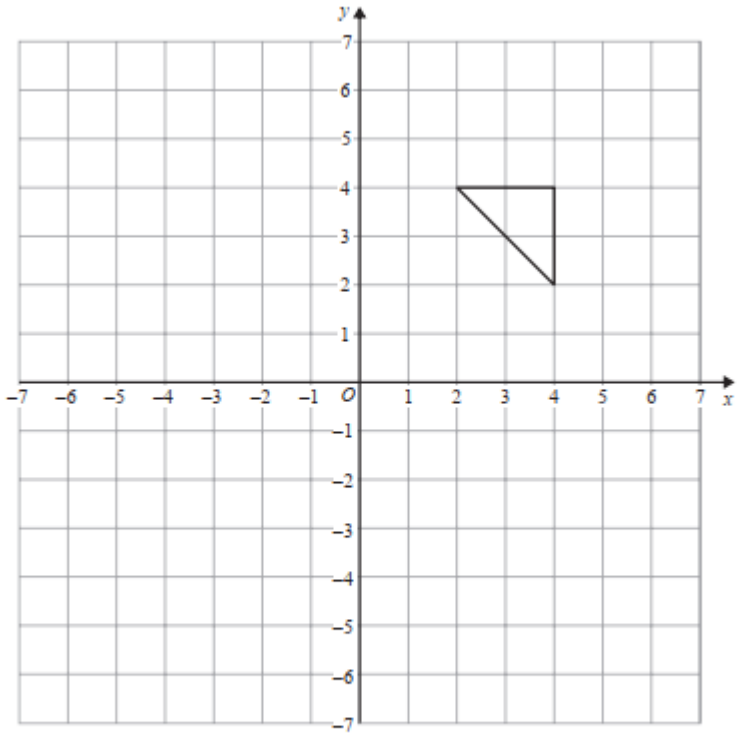
.....

(Total for Question 1 is 2 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 3 (Calculator) Higher Tier

13.

13



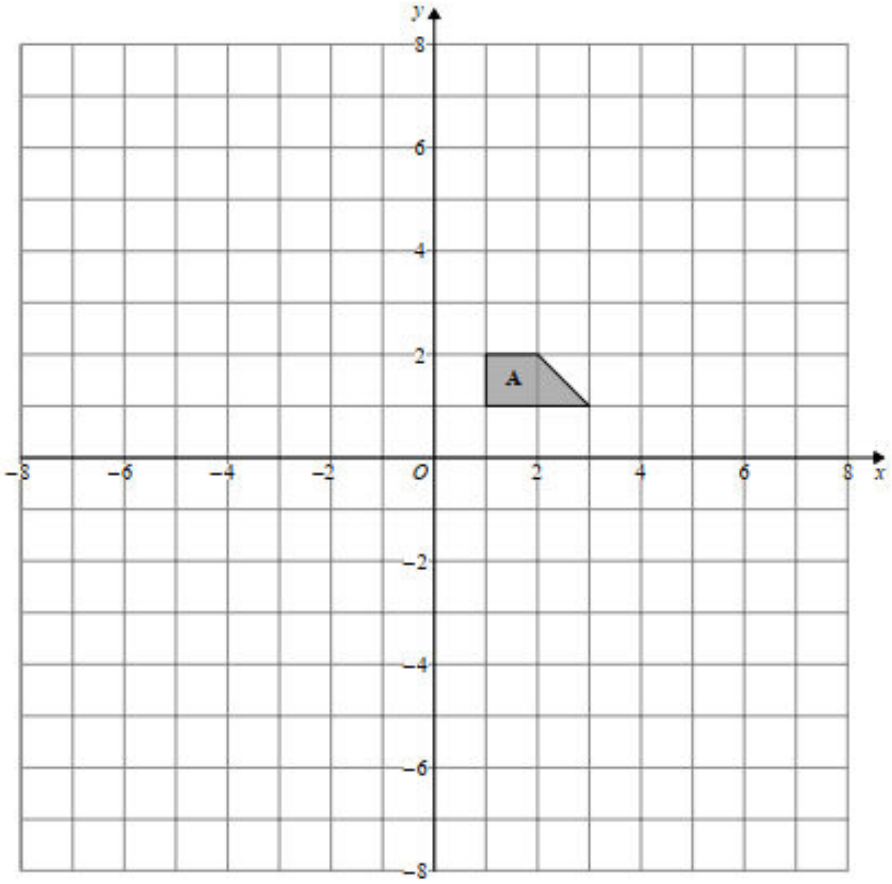
On the grid, enlarge the triangle by scale factor $-1\frac{1}{2}$, centre (0, 2)

(Total for Question 13 is 2 marks)

Pearson Edexcel - Sample Paper 1 - (Non-Calculator) Higher Tier

14.

20



(a) Enlarge shape **A** by scale factor −2, centre (0, 0)
Label your image **B**.

(2)

(b) Describe fully the single transformation that will map shape **B** onto shape **A**.

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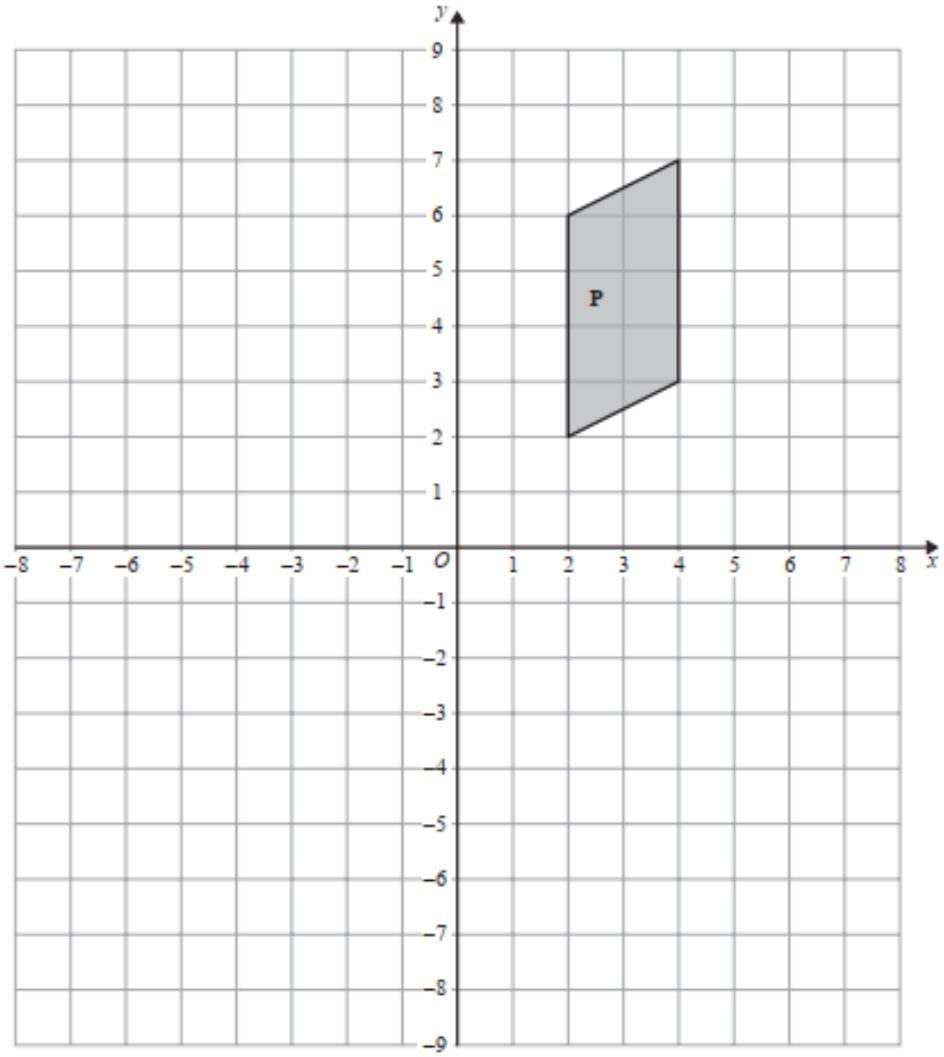
(1)

(Total for Question 20 is 3 marks)

Pearson Edexcel - Thursday 26 May 2016 - Paper 1 (Non-Calculator) Higher Tier

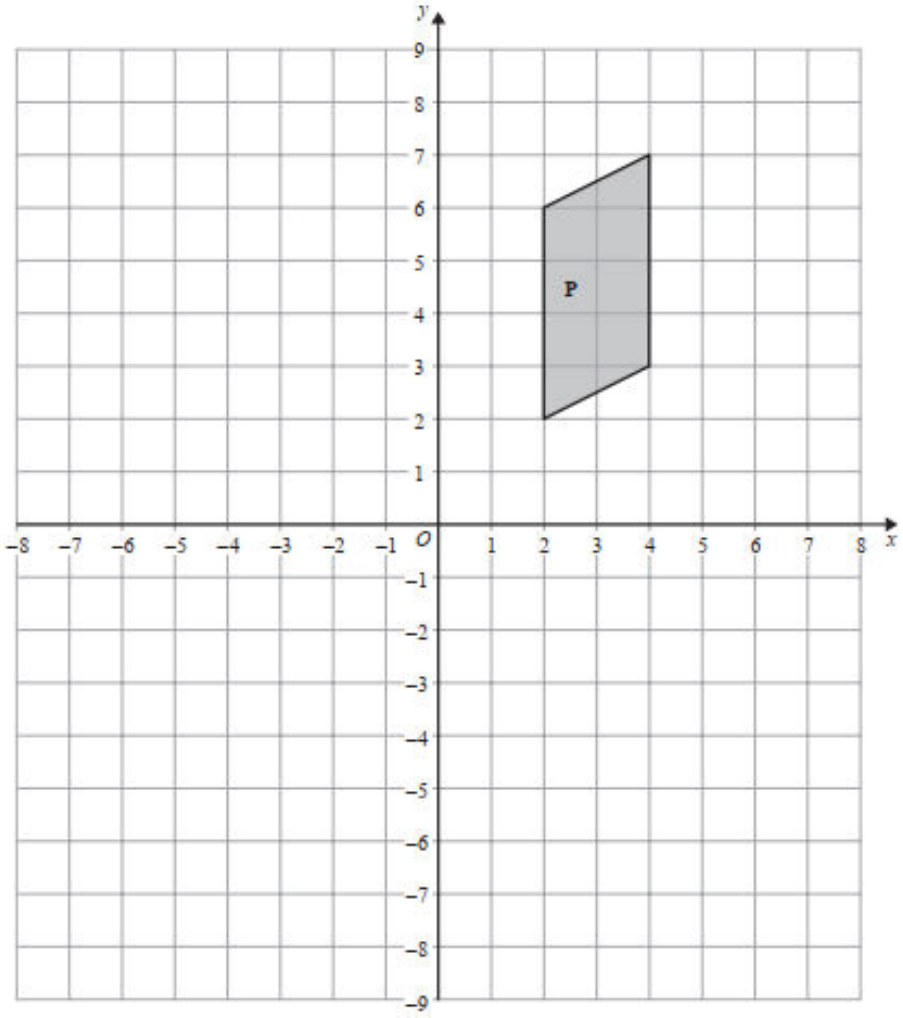
15.

2



(a) Reflect shape **P** in the line $x = -1$

(2)



(b) Rotate shape **P** 90° anticlockwise about (0, 1).

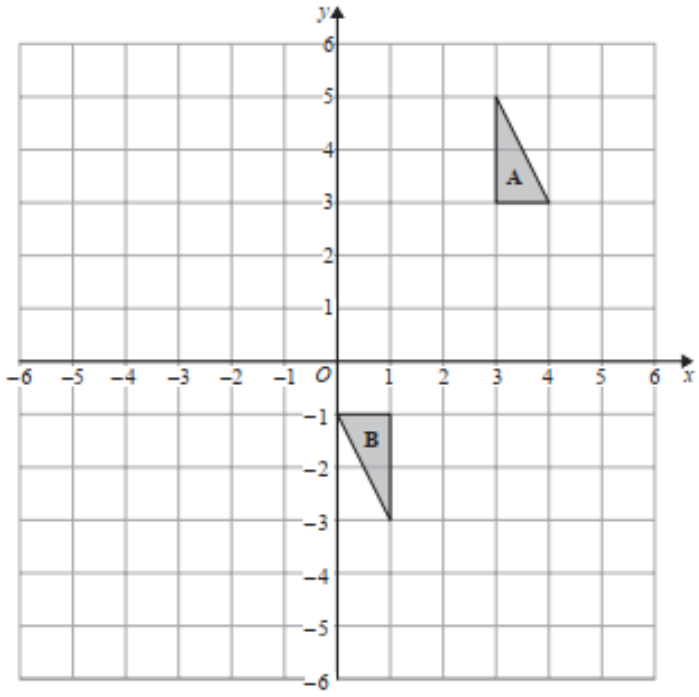
(2)

(Total for Question 2 is 4 marks)

Pearson Edexcel - Friday 6 November 2015 - Paper 2 (Calculator) Higher Tier

16.

12



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

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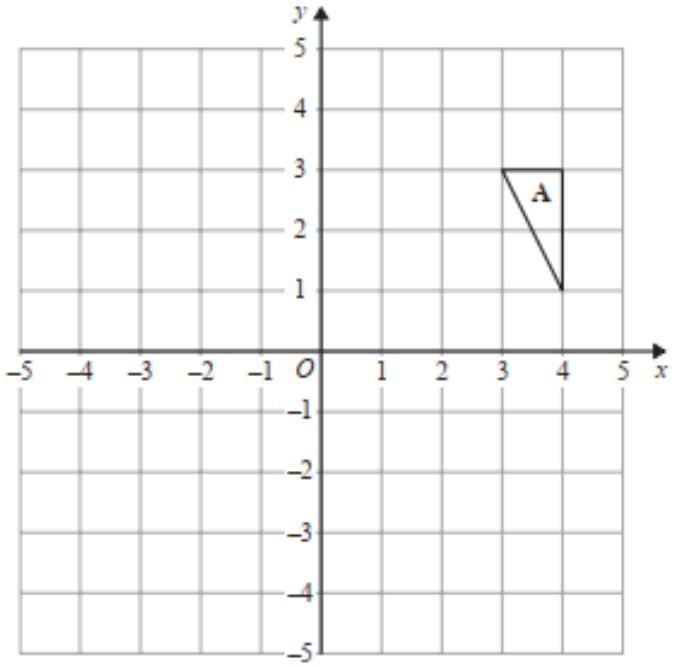
(Total for Question 12 is 3 marks)

Pearson Edexcel - Thursday 4 June 2015 - Paper 1 (Non-Calculator) Higher Tier

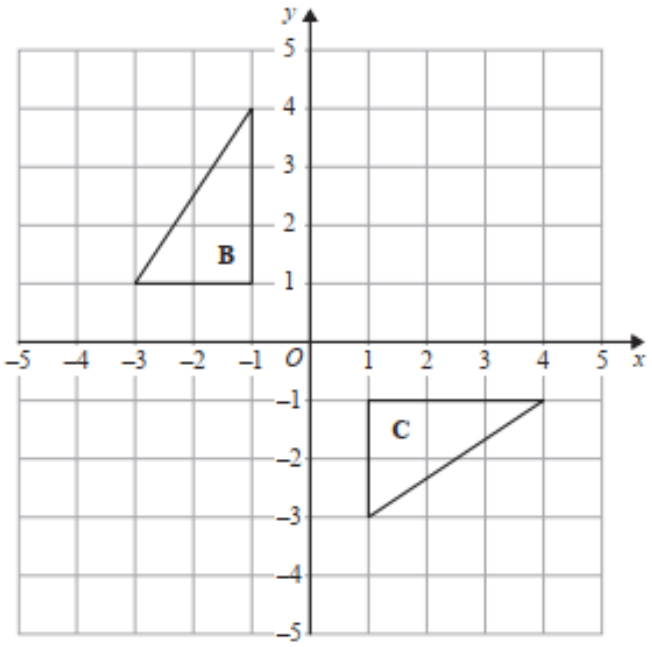
17.

7



(a) Rotate triangle **A** 90° anticlockwise with centre O.

(2)



(b) Describe fully the single transformation that maps triangle **B** onto triangle **C**.

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.....

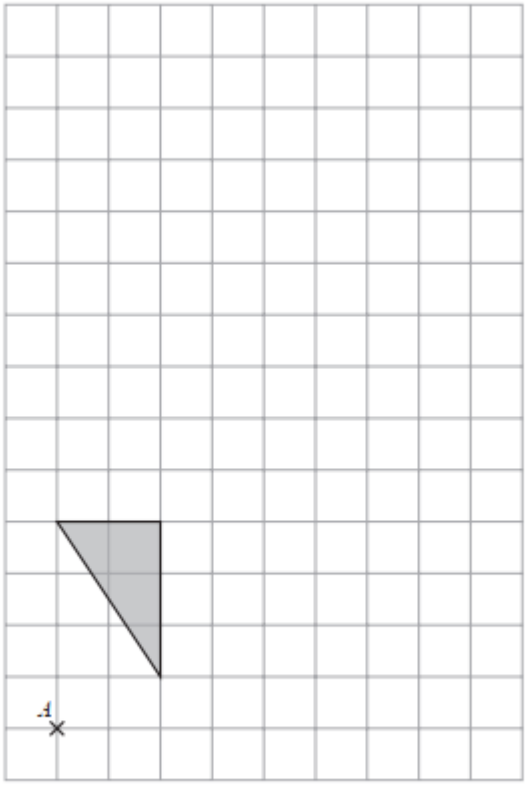
(2)

(Total for Question 7 is 4 marks)

Pearson Edexcel - Monday 8 June 2015 - Paper 2 (Calculator) Higher Tier

18.

4 A shaded shape is shown on the grid.



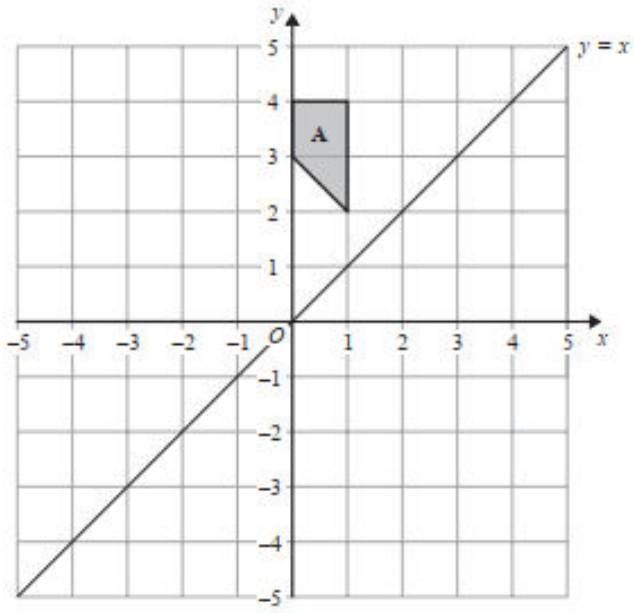
On the grid, enlarge the shape by a scale factor of 2, centre A.

(Total for Question 4 is 2 marks)

Pearson Edexcel - Friday 7 November 2014 - Paper 2 (Calculator) Higher Tier

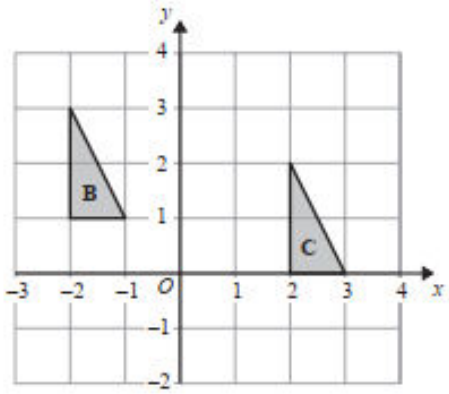
19.

4



(a) On the grid, reflect shape **A** in the line $y = x$.

(2)



(b) Describe fully the single transformation that maps triangle **B** onto triangle **C**.

.....

.....

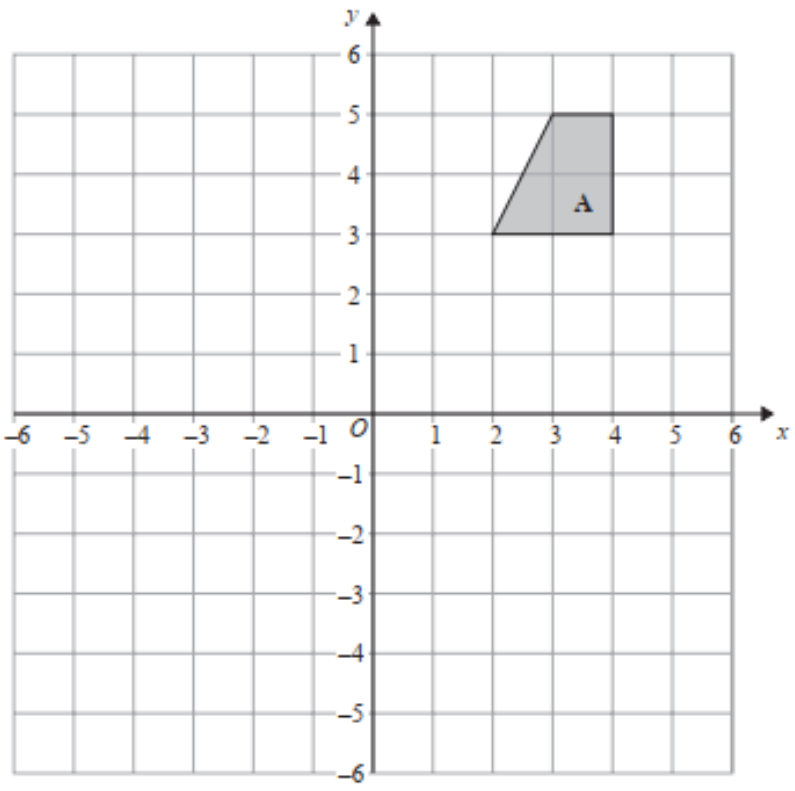
(2)

(Total for Question 4 is 4 marks)

Pearson Edexcel - Monday 9 June 2014 - Paper 1 (Non-Calculator) Higher Tier

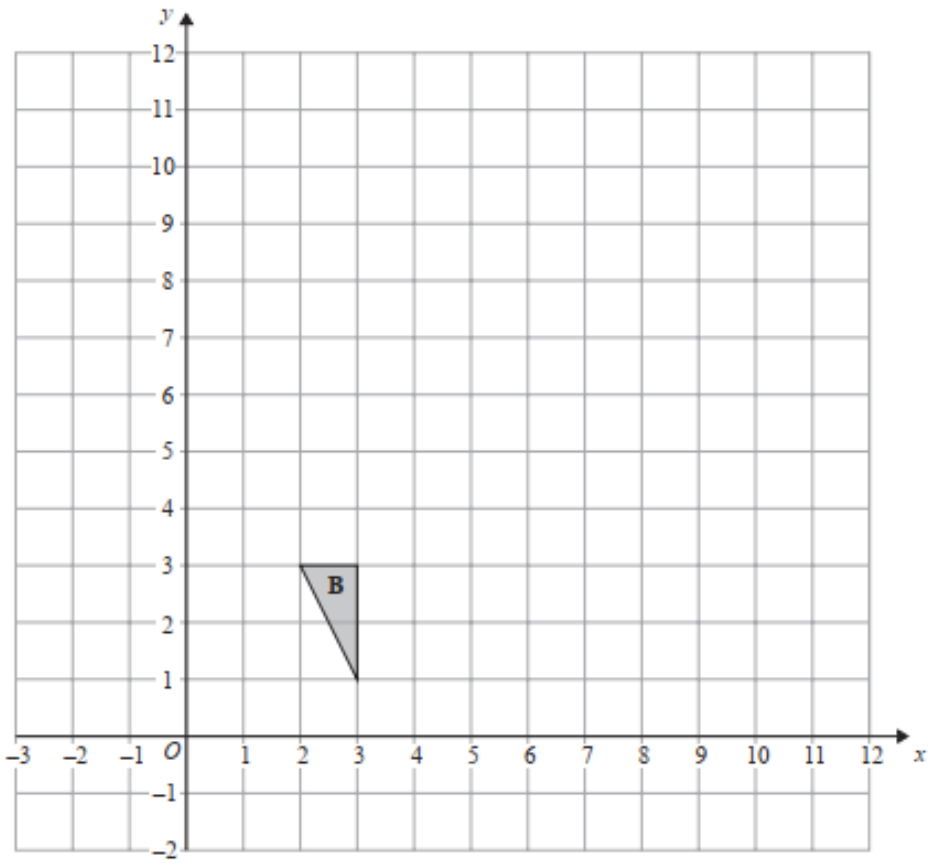
20.

9



(a) On the grid, rotate shape **A** 180° about the point (1, 1).

(2)



(b) On the grid, enlarge triangle **B** by scale factor 3, centre (0, 0).

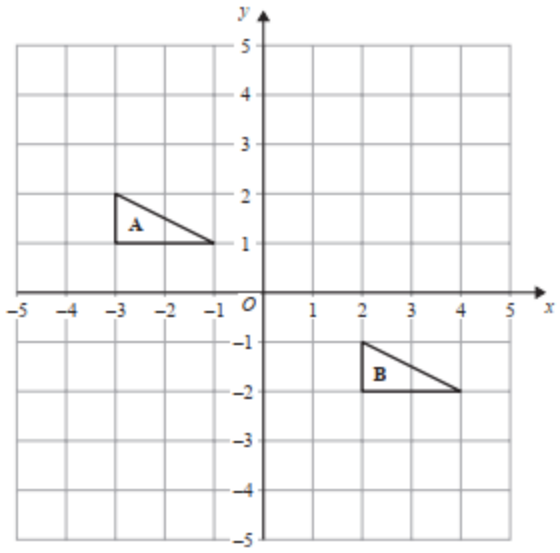
(2)

(Total for Question 9 is 4 marks)

Pearson Edexcel - Friday 13 June 2014 - Paper 2 (Calculator) Higher Tier

21.

5



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

.....

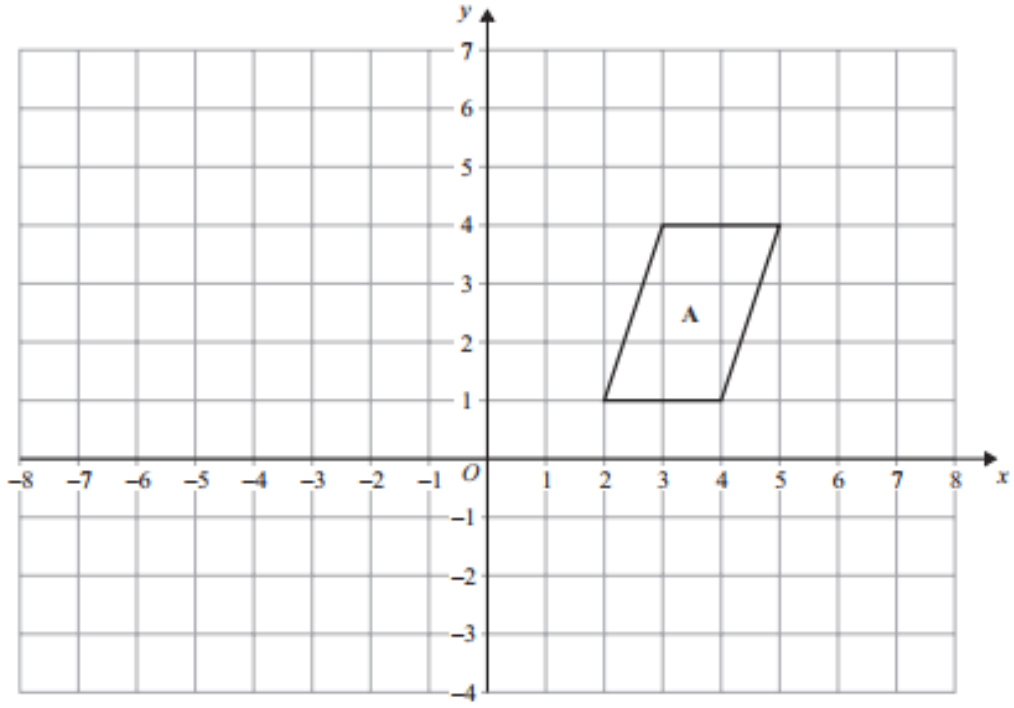
.....

(Total for Question 5 is 2 marks)

Pearson Edexcel - Wednesday 6 November 2013 - Paper 1 (Non-Calculator) Higher Tier

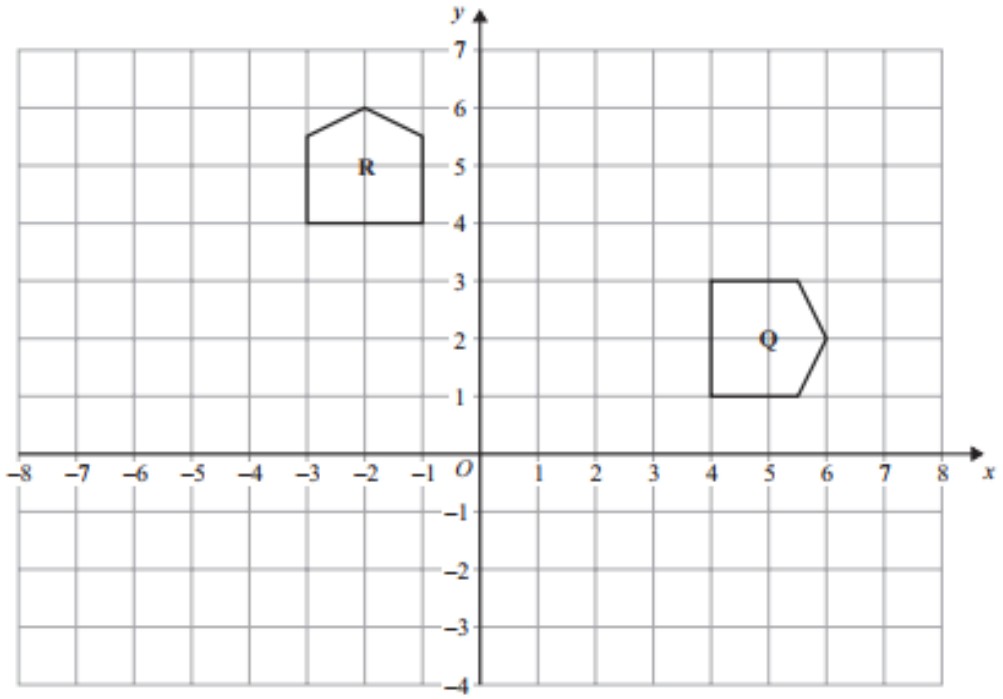
22.

6



(a) Translate shape **A** by the vector $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$.

(1)



(b) Describe fully the single transformation that maps shape **Q** onto shape **R**.

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.....

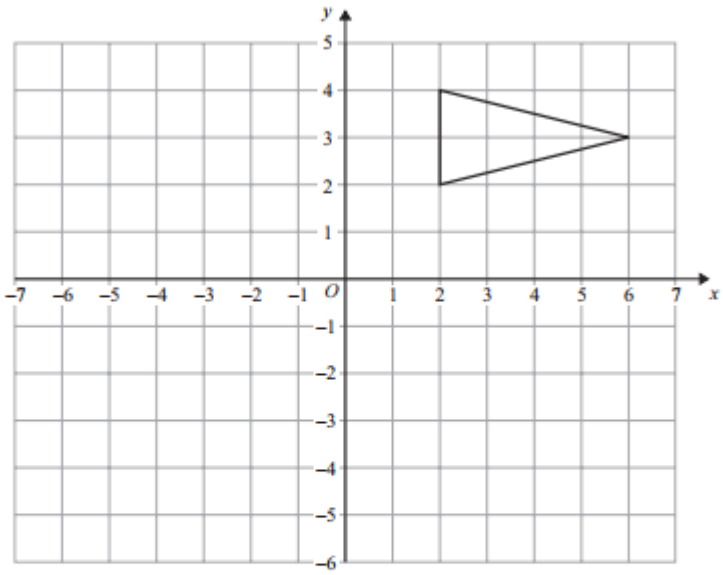
(3)

(Total for Question 6 is 4 marks)

Pearson Edexcel - Wednesday 6 November 2013 - Paper 1 (Non-Calculator) Higher Tier

23.

23



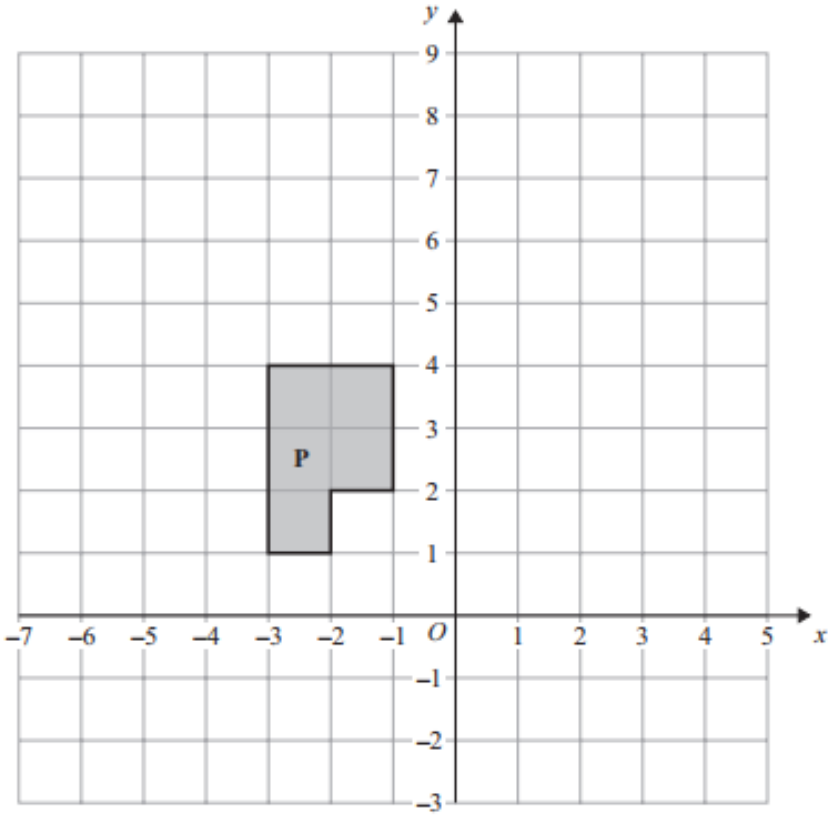
On the grid, enlarge the triangle by scale factor $-\frac{1}{2}$, centre $(0, -2)$.

(Total for Question 23 is 2 marks)

Pearson Edexcel - Tuesday 11 June 2013 - Paper 1 (Non-Calculator) Higher Tier

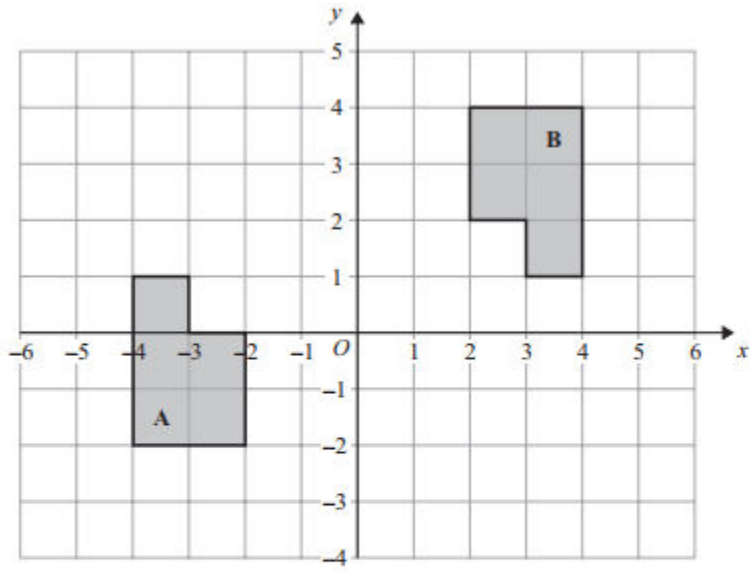
24.

7



(a) Translate shape **P** by the vector $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$

(2)



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

.....

.....

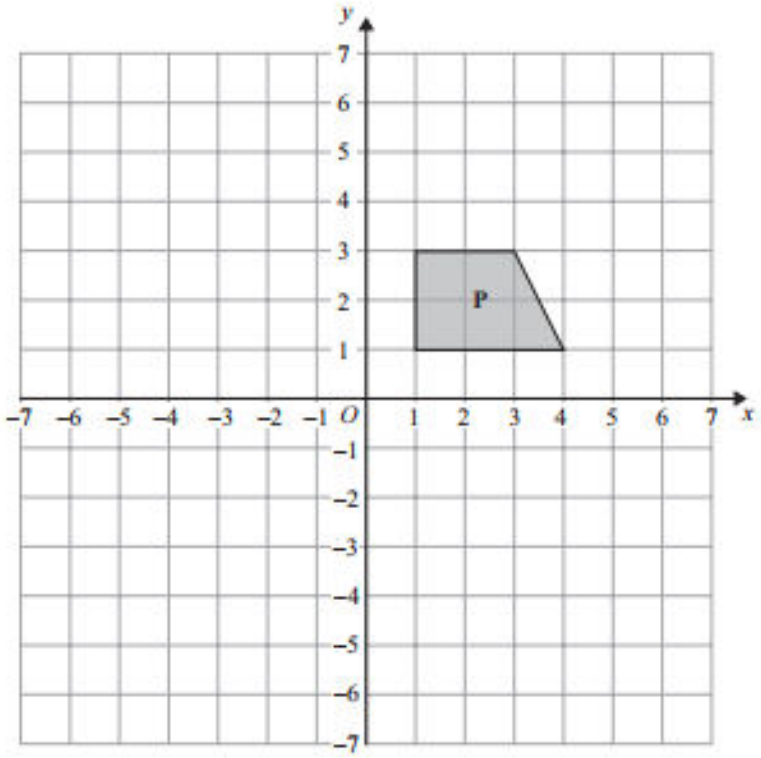
(3)

(Total for Question 7 is 5 marks)

Pearson Edexcel - Thursday 28 February 2013 - Paper 1 (Non-Calculator) Higher Tier

25.

18



Shape **P** is reflected in the line $x = -1$ to give shape **Q**.

Shape **Q** is reflected in the line $y = 0$ to give shape **R**.

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

.....

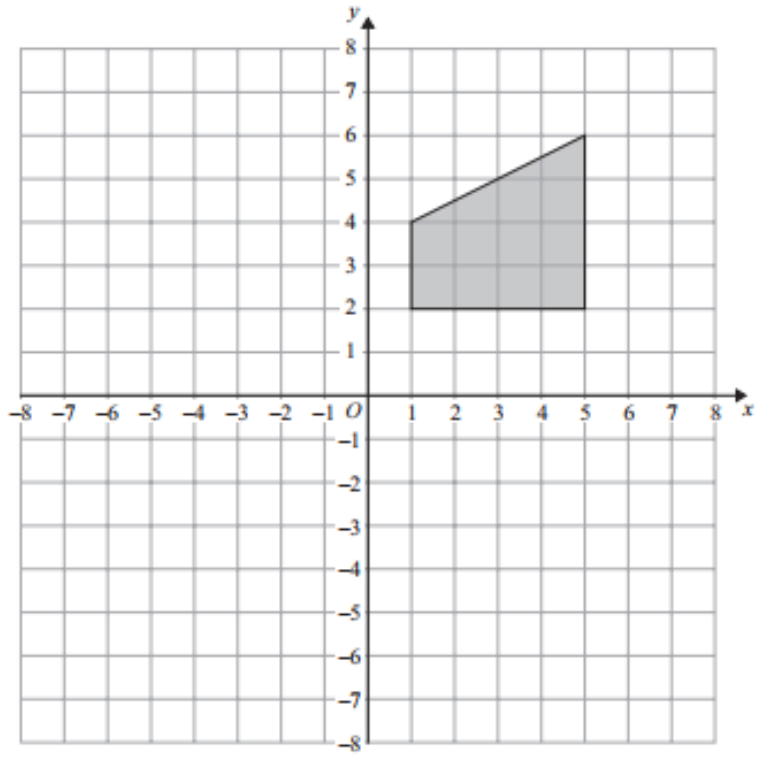
.....

(Total for Question 18 is 3 marks)

Pearson Edexcel - Thursday 28 February 2013 - Paper 1 (Non-Calculator) Higher Tier

26.

22



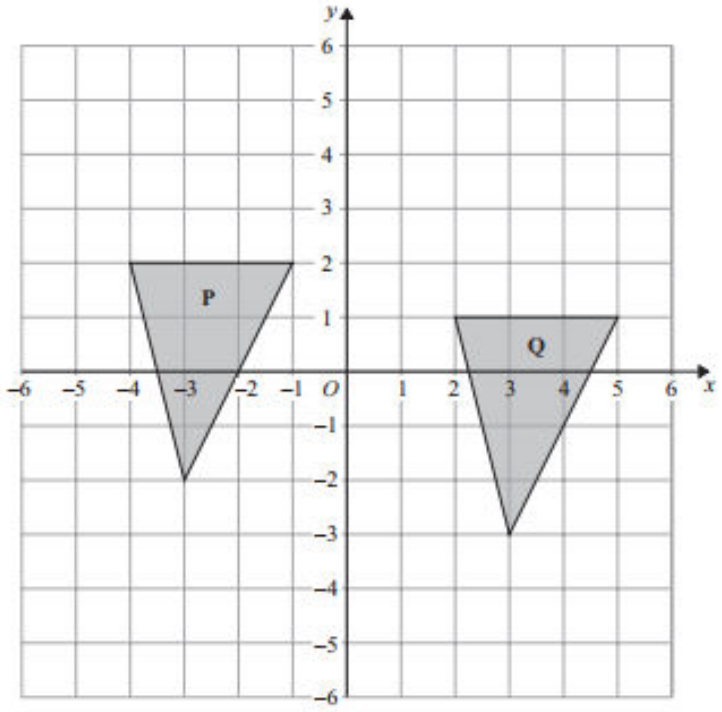
Enlarge the shaded shape by scale factor $-\frac{1}{2}$ with centre $(-1, -2)$.

(Total for Question 22 is 3 marks)

Pearson Edexcel - Monday 4 March 2013 - Paper 2 (Calculator) Higher Tier

27.

10



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

.....

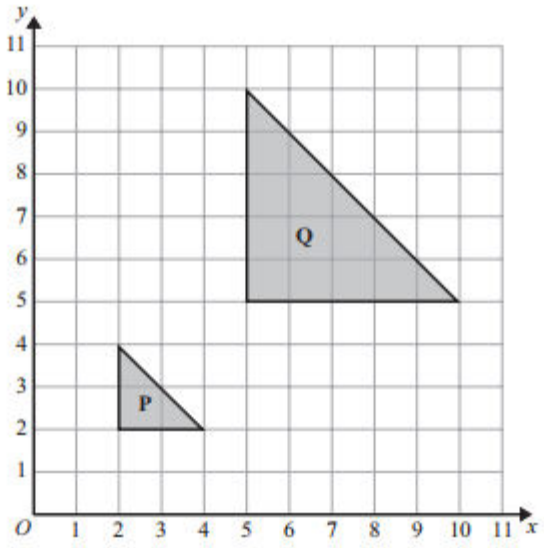
.....

(Total for Question 10 is 2 marks)

Pearson Edexcel - Tuesday 6 November 2012 - Paper 1 (Non-Calculator) Higher Tier

28.

6



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

.....

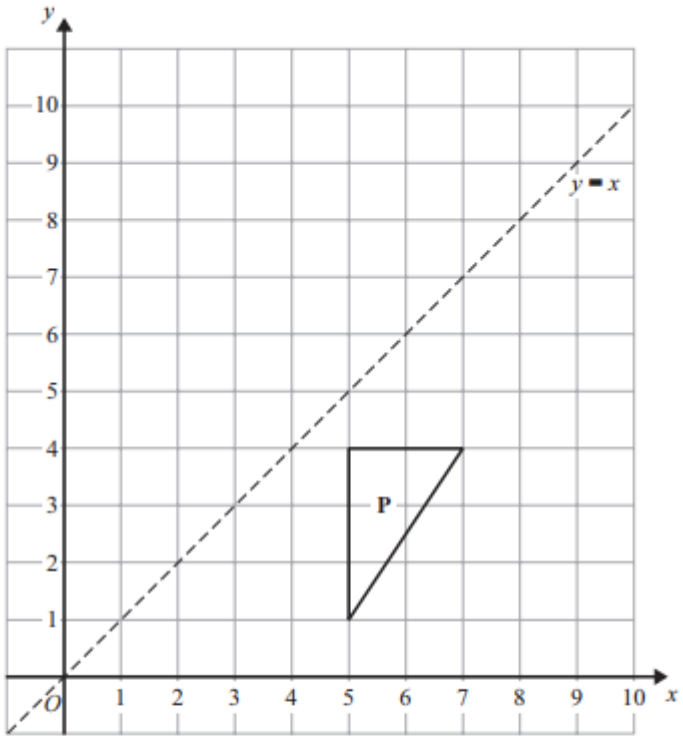
.....

(Total for Question 6 is 3 marks)

Pearson Edexcel - Thursday 8 November 2012 - Paper 2 (Calculator) Higher Tier

29.

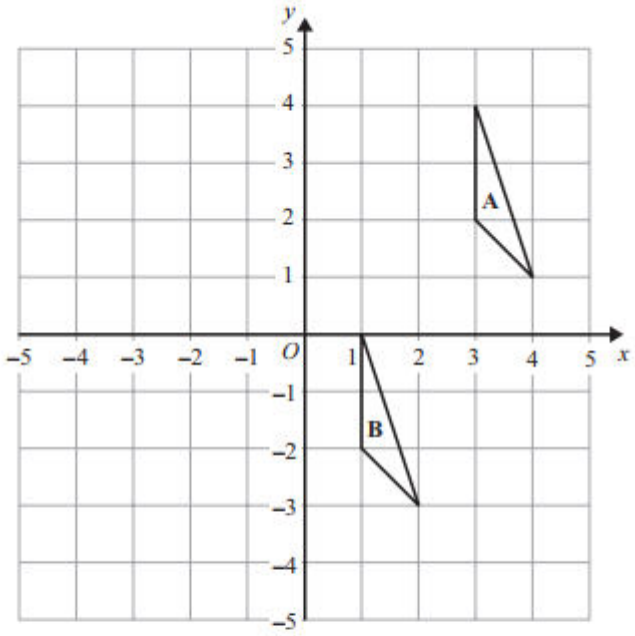
2 (a)



Reflect shape **P** in the line $y = x$

(2)

(b)



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

.....

.....

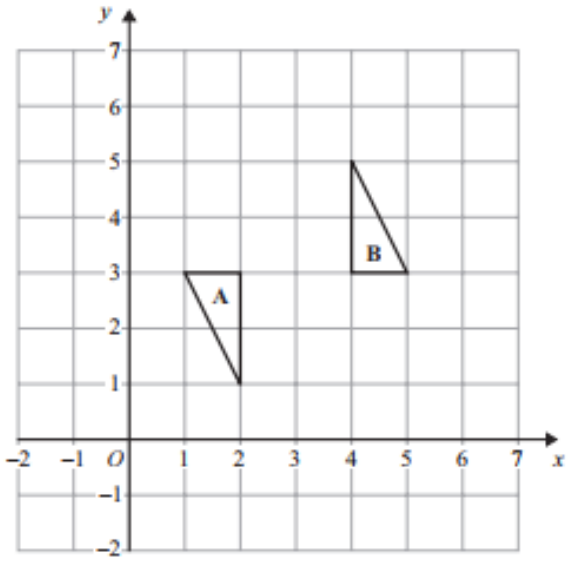
(2)

(Total for Question 2 is 4 marks)

Pearson Edexcel - Monday 11 June 2012 - Paper 1 (Non-Calculator) Higher Tier

30.

9



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

.....

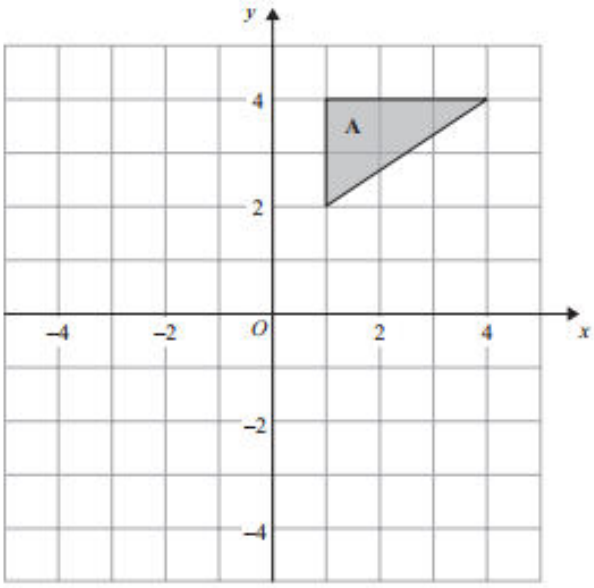
.....

(Total for Question 9 is 3 marks)

Pearson Edexcel - Wednesday 13 June 2012 - Paper 2 (Calculator) Higher Tier

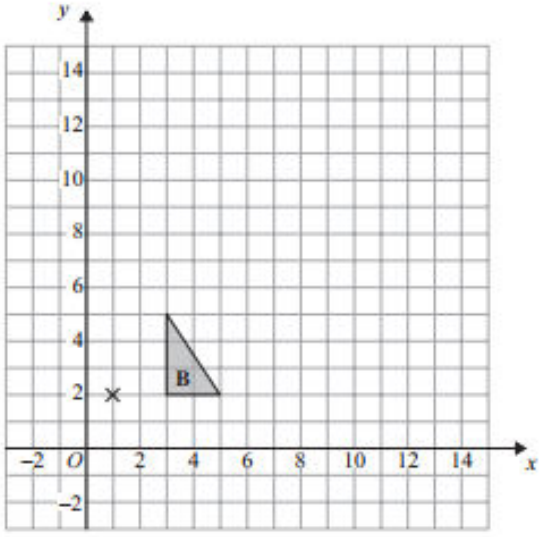
31.

8



(a) Rotate triangle **A** 90° clockwise, centre O.

(2)



(b) Enlarge triangle **B** by scale factor 3, centre (1, 2).

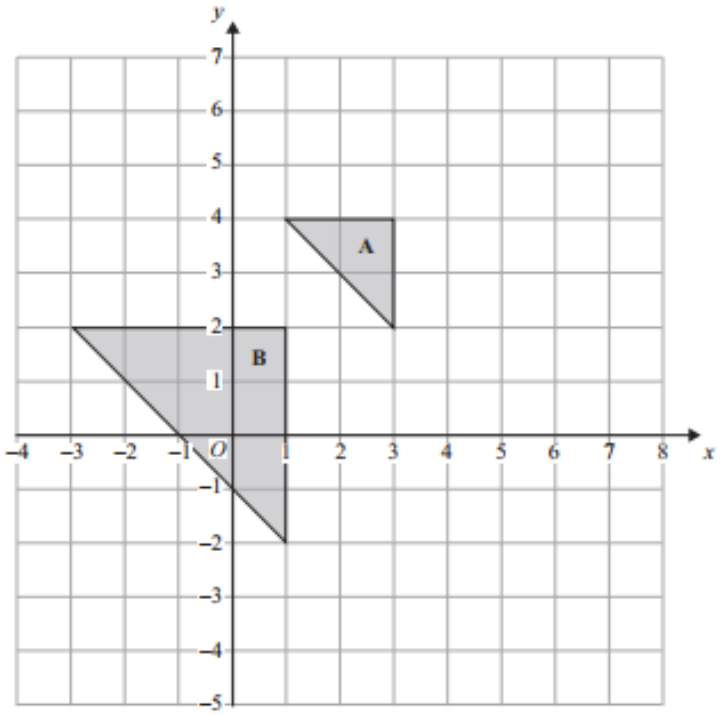
(3)

(Total for Question 8 is 5 marks)

Pearson Edexcel - Monday 5 March 2012 - Paper 4 (Calculator) Higher Tier

32.

15.



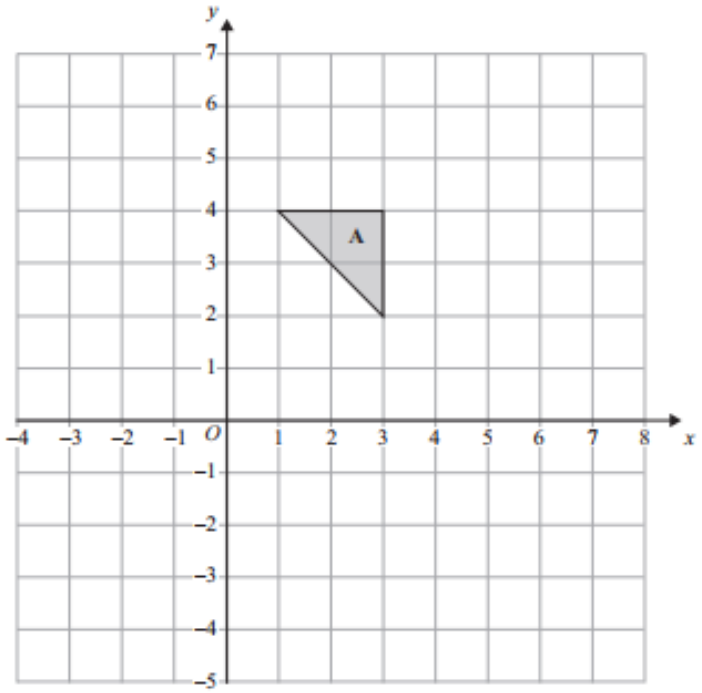
Triangle **A** and triangle **B** are drawn on the grid.

(a) Describe fully the single transformation which maps triangle **A** onto triangle **B**.

.....

.....

(3)



(b) Reflect triangle **A** in the line $x = 4$

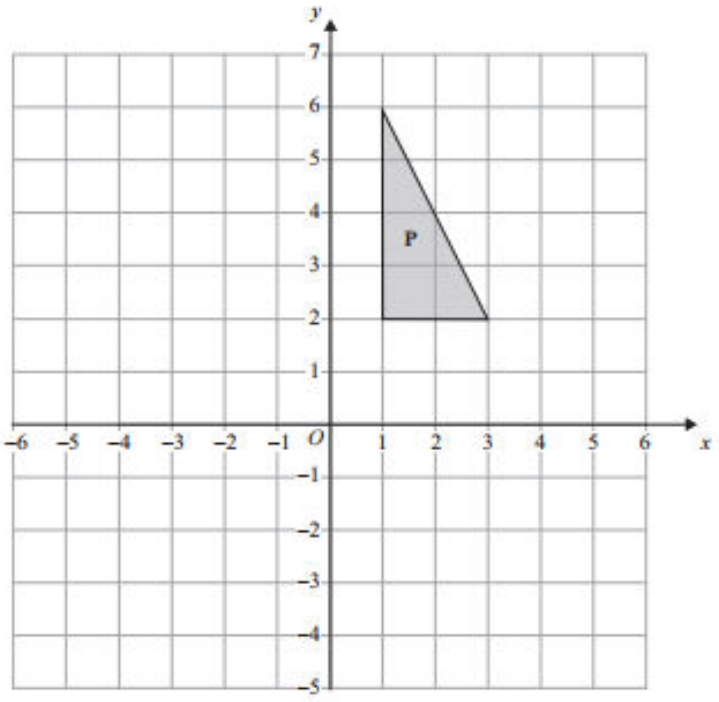
(2)

(Total 5 marks)

Pearson Edexcel - Monday 5 March 2012 - Paper 4 (Calculator) Higher Tier

33.

17.



Triangle **P** is drawn on a coordinate grid.

The triangle **P** is reflected in the line $x = -1$ and then reflected in the line $y = 1$ to give triangle **Q**.

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

.....

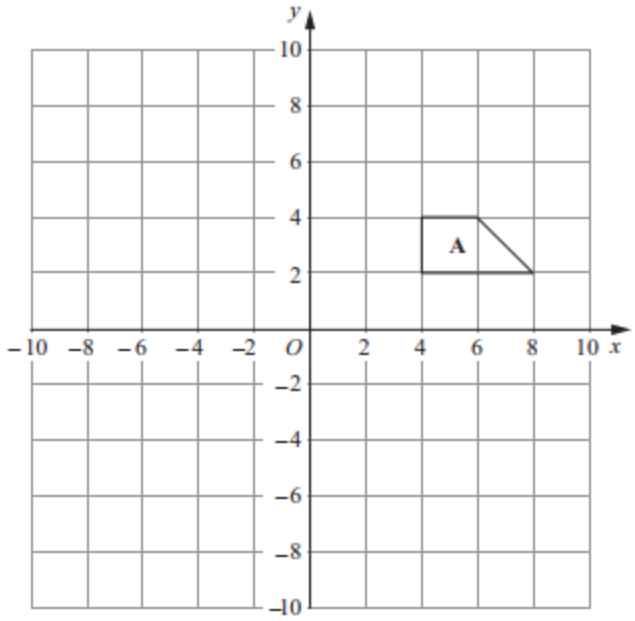
.....

(Total 3 marks)

Pearson Edexcel - Wednesday 9 November 2011 - Paper 3 (Non-Calculator) Higher Tier

34.

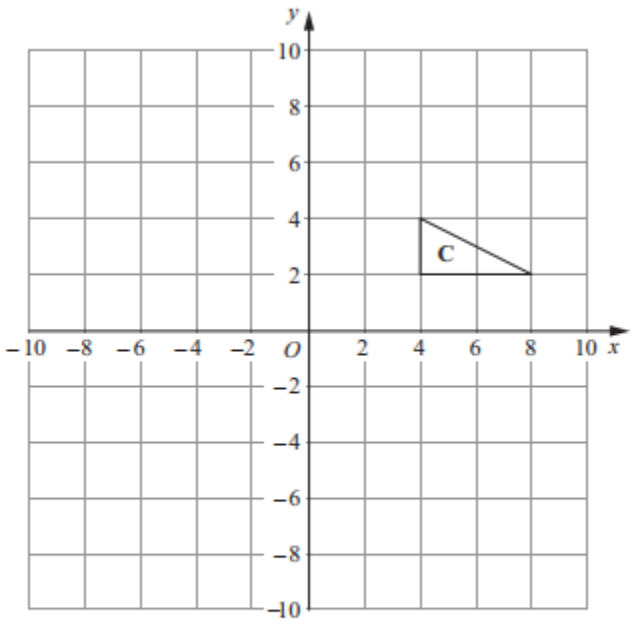
5.



(a) Translate shape **A** by $\begin{pmatrix} -8 \\ -2 \end{pmatrix}$

Label the new shape **B**.

(2)



(b) Reflect shape **C** in the line $y = x$.
Label the new shape **D**.

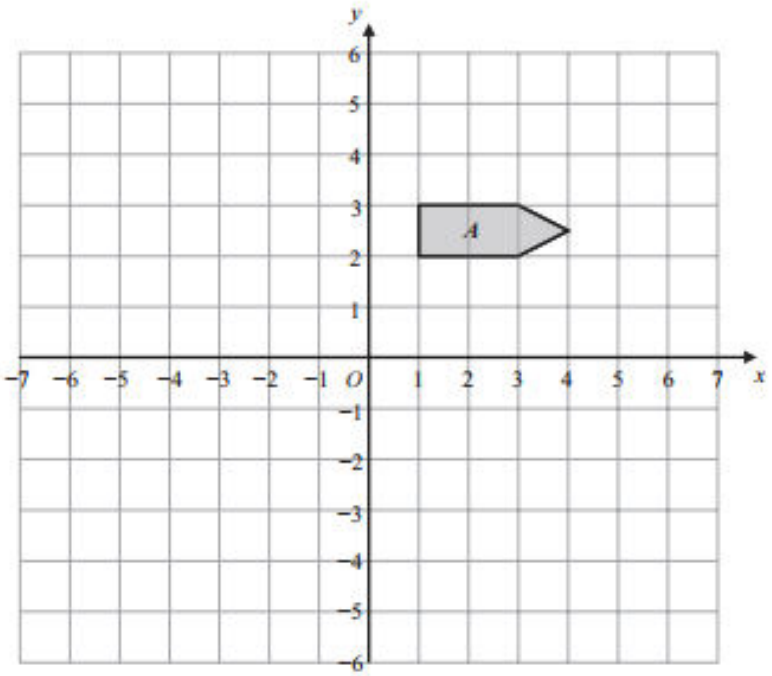
(2)

(Total 4 marks)

Pearson Edexcel - Monday 6 June 2011 - Paper 3 (Non-Calculator) Higher Tier

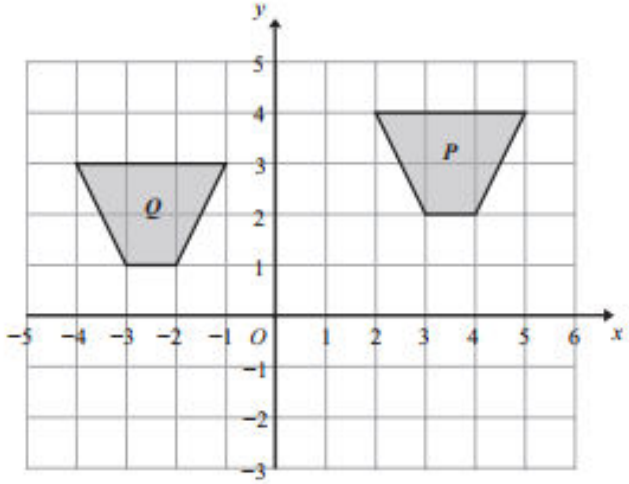
35.

7.



(a) On the grid above, reflect shape A in the line $x = -1$

(2)



(b) Describe fully the single transformation that will map shape P onto shape Q.

.....

.....

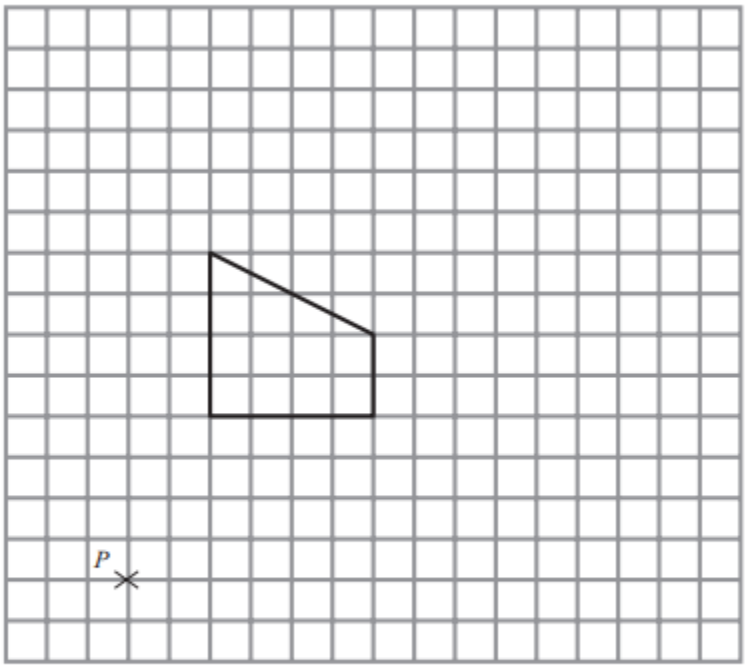
(2)

(Total 4 marks)

Pearson Edexcel - Friday 10 June 2011 - Paper 4 (Calculator) Higher Tier

36.

2.



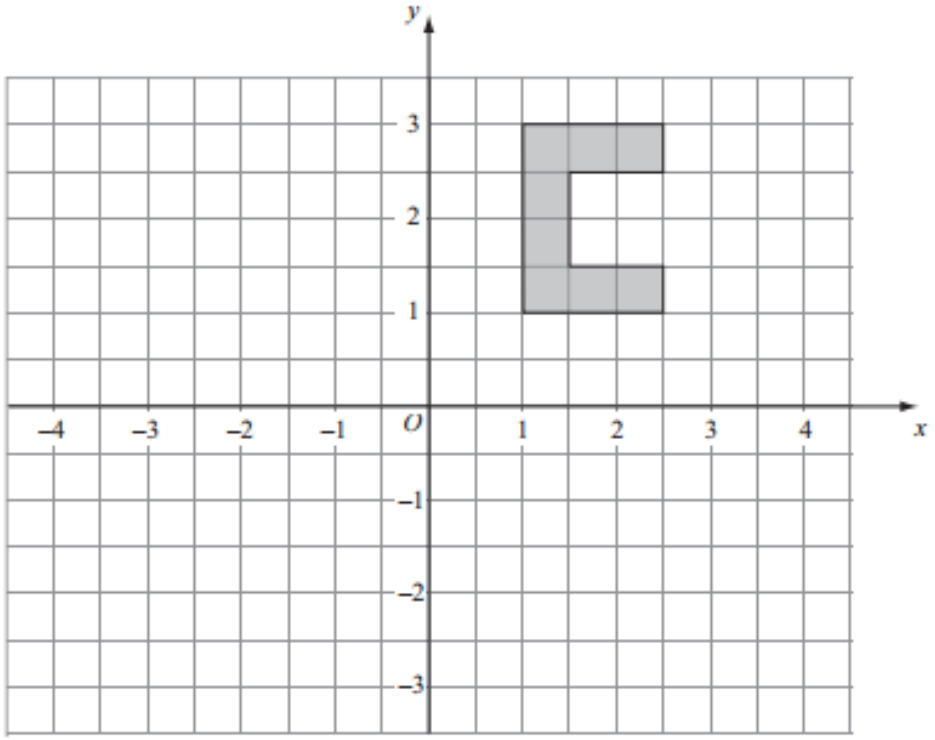
On the grid, enlarge the shape with a scale factor of $\frac{1}{2}$, centre P.

(Total 3 marks)

Pearson Edexcel - Friday 10 June 2011 - Paper 4 (Calculator) Higher Tier

37.

8.



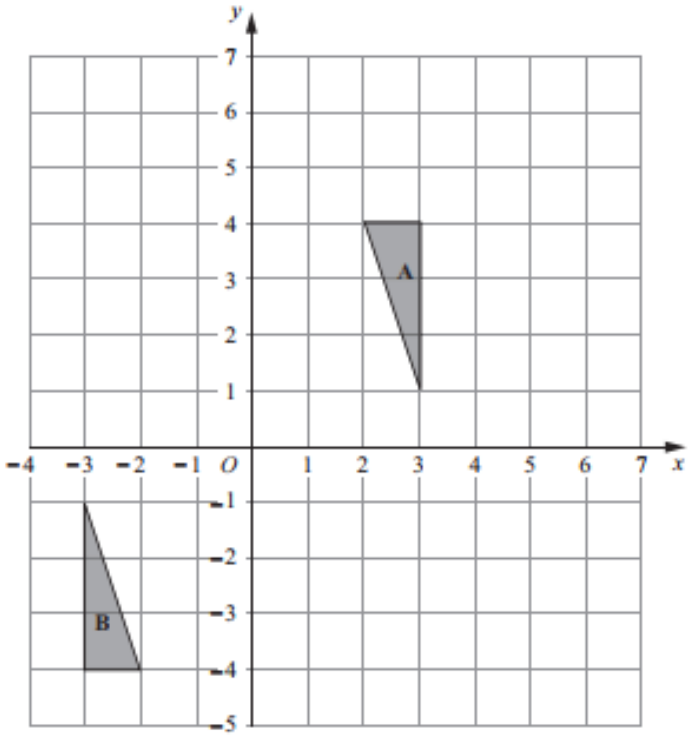
Rotate the shape 90° clockwise, centre O.

(Total 2 marks)

Pearson Edexcel - Tuesday 9 November 2010 - Paper 3 (Non-Calculator) Higher Tier

38.

12.



Triangle **A** and triangle **B** are drawn on the grid.

(a) Describe fully the single transformation which maps triangle **A** onto triangle **B**.

.....

.....

(3)

(b) Translate triangle **A** by the vector $\begin{pmatrix} 3 \\ 0 \end{pmatrix}$.

Label the new triangle **C**.

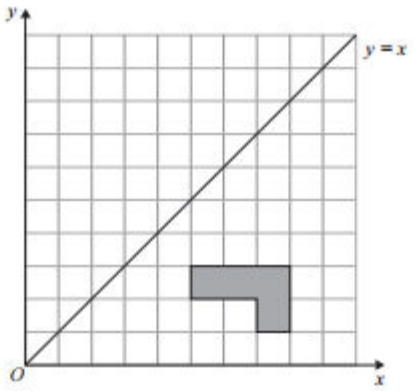
(1)

(Total 4 marks)

Pearson Edexcel - Friday 12 November 2010 - Paper 4 (Calculator) Higher Tier

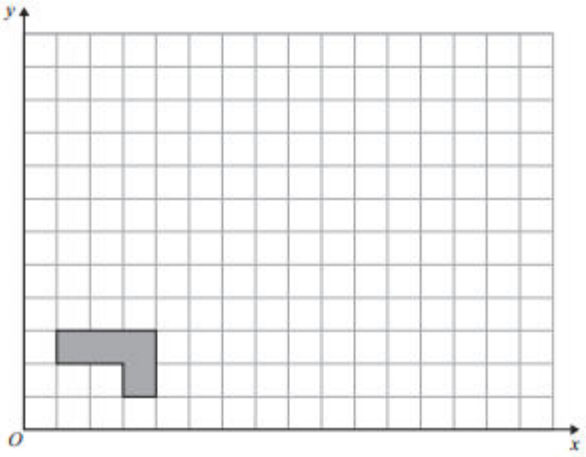
39.

5.



(a) Reflect the shaded shape in the line $y = x$.

(2)



(b) On the grid, enlarge the shaded shape by a scale factor of 3, centre O.

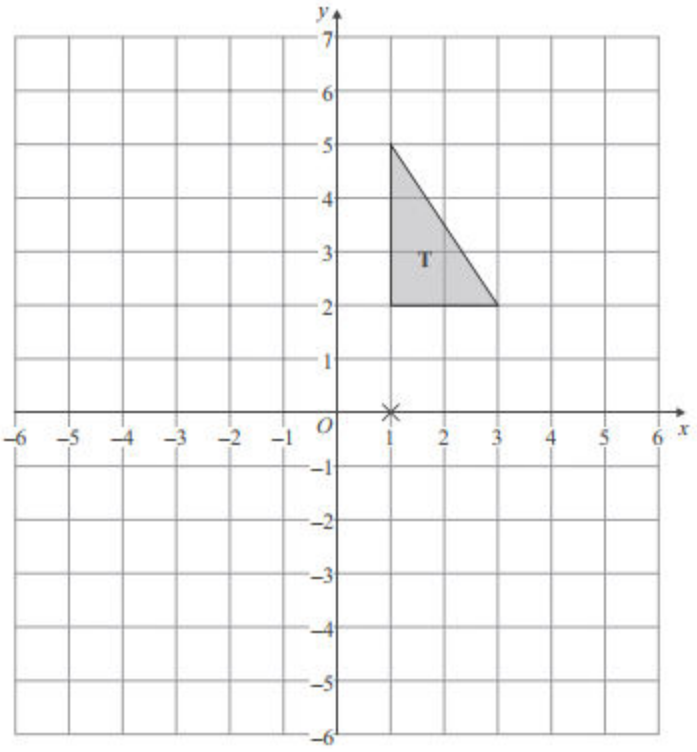
(3)

(Total 5 marks)

Pearson Edexcel - Monday 7 June 2010 - Paper 3 (Non-Calculator) Higher Tier

40.

5.



Triangle **T** has been drawn on the grid.

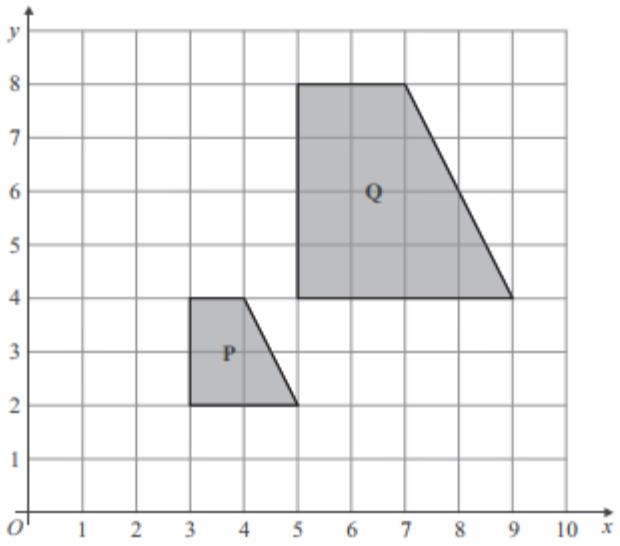
Rotate triangle **T** 180° about the point (1, 0).
Label the new triangle **A**.

(Total 2 marks)

Pearson Edexcel - Monday 7 June 2010 - Paper 3 (Non-Calculator) Higher Tier

41.

6.



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

.....

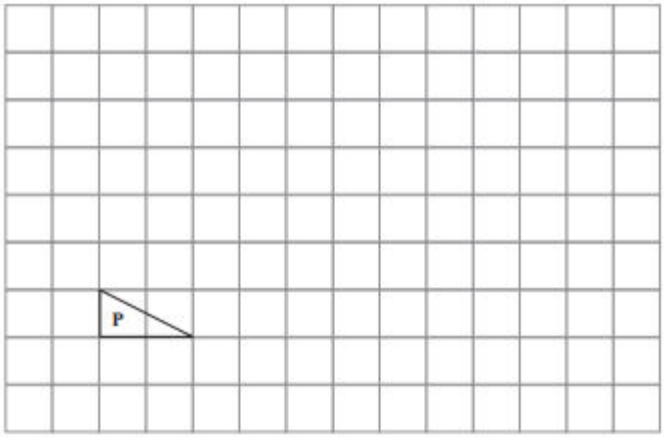
.....

(Total 3 marks)

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier

42.

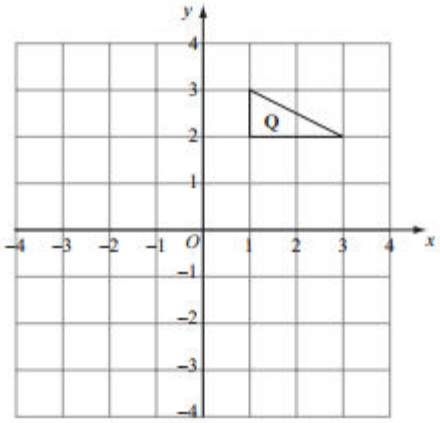
4.



Triangle **P** has been drawn on a grid.

(a) On the grid, draw an enlargement of the triangle **P** with scale factor 3

(2)



Triangle **Q** has been drawn on a grid.

(b) On the grid, rotate triangle **Q** 90° clockwise, centre *O*.

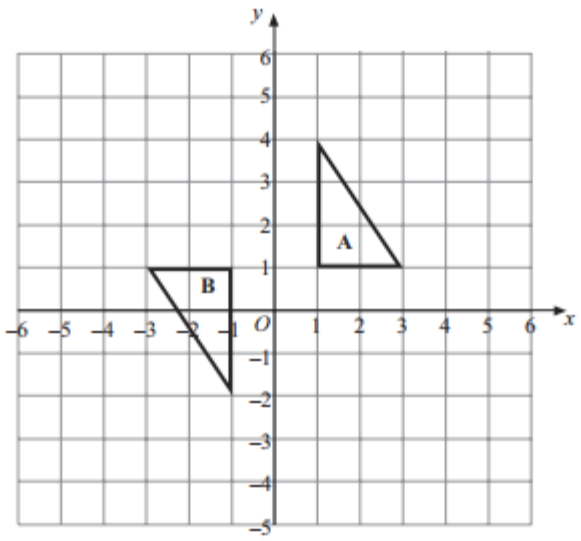
(3)

(Total 5 marks)

Pearson Edexcel - Tuesday 10 November 2009 - Paper 4 (Calculator) Higher Tier

43.

9.



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

.....

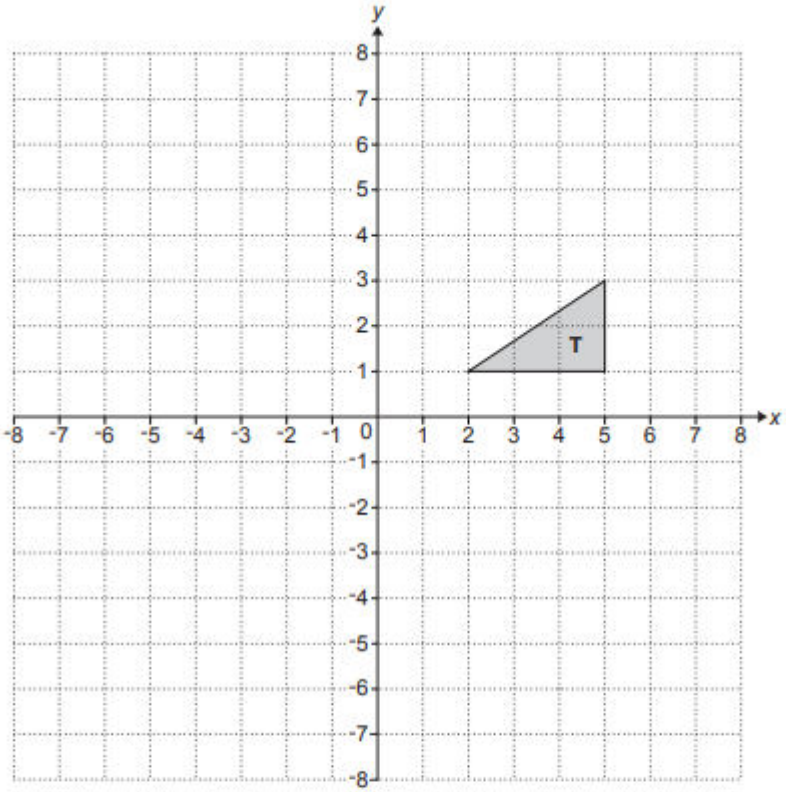
.....

(Total 3 marks)

OCR GSCE – Tuesday 3 November 2020 – Paper 4 (Calculator) Higher Tier

44.

12 Triangle **T** is drawn on a coordinate grid.



(a) Translate triangle **T** by vector $\begin{pmatrix} -6 \\ 2 \end{pmatrix}$. **[2]**

(b) Describe fully the **single** transformation that is equivalent to:

- a reflection in the line $y = x$, followed by
- a reflection in the x-axis.

You may use the grid above to help you.

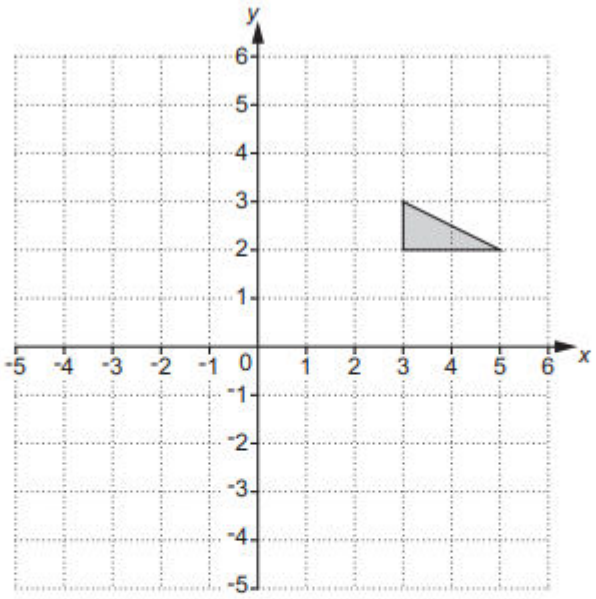
.....

..... **[3]**

OCR GSCE – Thursday 7 November 2019 – Paper 5 (Non-Calculator) Higher Tier

45.

15 You may use this coordinate grid to help you answer the following questions.



Describe fully the **single** transformation that is equivalent to

(a) a translation of $\begin{pmatrix} -7 \\ 2 \end{pmatrix}$ followed by a translation of $\begin{pmatrix} 3 \\ -5 \end{pmatrix}$.

.....

..... **[2]**

(b) a reflection in the line $y = x$ followed by a rotation of 90° clockwise around (0, 0).

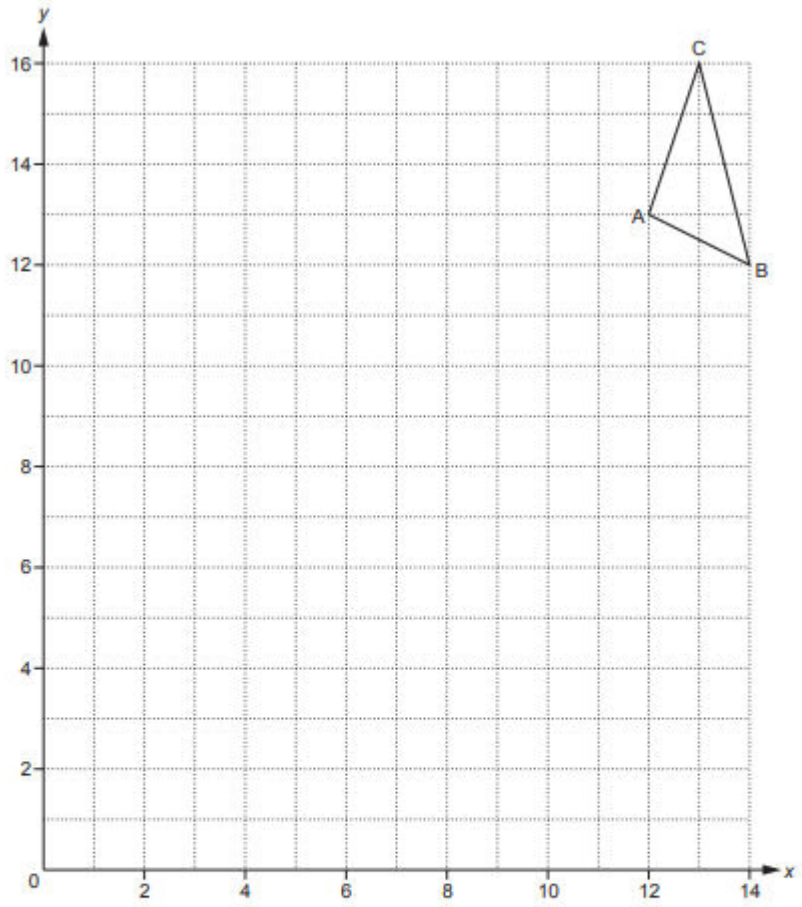
.....

..... **[3]**

OCR GSCE – Monday 11 November 2019 – Paper 6 (Calculator) Higher Tier

46.

17 A triangle has vertices A, B and C.



The triangle is enlarged with scale factor *f* and centre of enlargement E.

Vertex A maps to (6, 7).
Vertex B maps to (2, 9).

(a) Find the coordinates of the centre of enlargement, E.

(a) (..... , ...) **[2]**

(b) Find the scale factor, f.

(b) ..... **[2]**

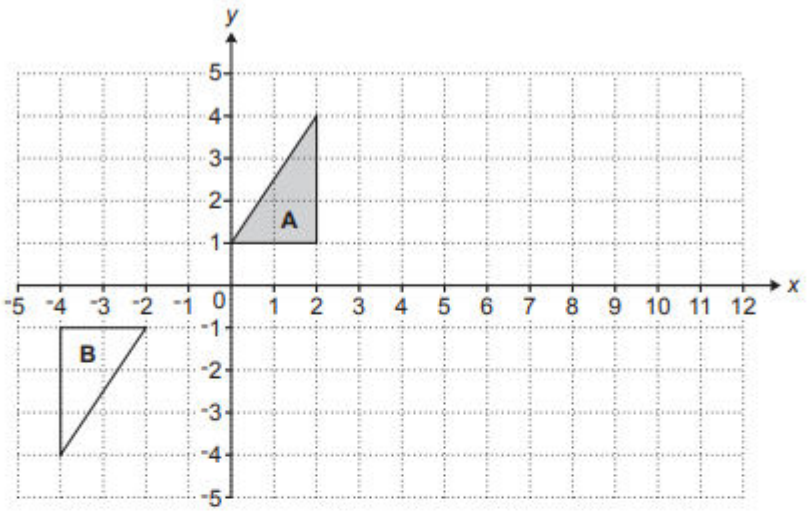
(c) Vertex C maps to the point R.
Find the coordinates of R.

(c) (..... , ...) **[2]**

OCR GSCE – Tuesday 21 May 2019 – Paper 4 (Calculator) Higher Tier

47.

8 Triangle **A** and triangle **B** are drawn on the coordinate grid.



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

.....

..... **[3]**

(b) Describe fully the **single** transformation that is equivalent to:

- a reflection in the line $x = 3$, followed by
- a translation by $\begin{pmatrix} 4 \\ 0 \end{pmatrix}$.

You may use the grid above to help you.

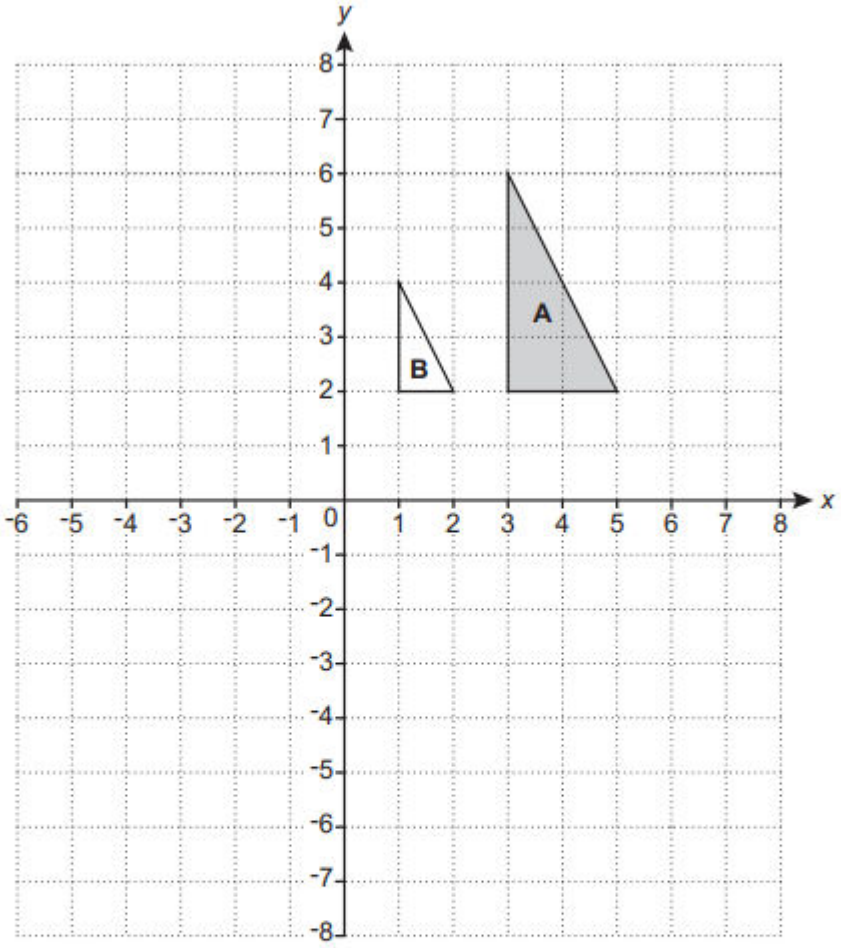
.....

..... **[3]**

OCR GSCE – Thursday 8 November 2018 – Paper 5 (Non-Calculator) Higher Tier

48.

10 Triangle **A** and triangle **B** are drawn on the coordinate grid.



(a) (i) Draw the image of triangle **A** after a rotation of 180° about (0, 0). **[2]**

(ii) Draw the image of triangle **A** after a translation by the vector $\begin{pmatrix} 2 \\ -7 \end{pmatrix}$. **[2]**

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

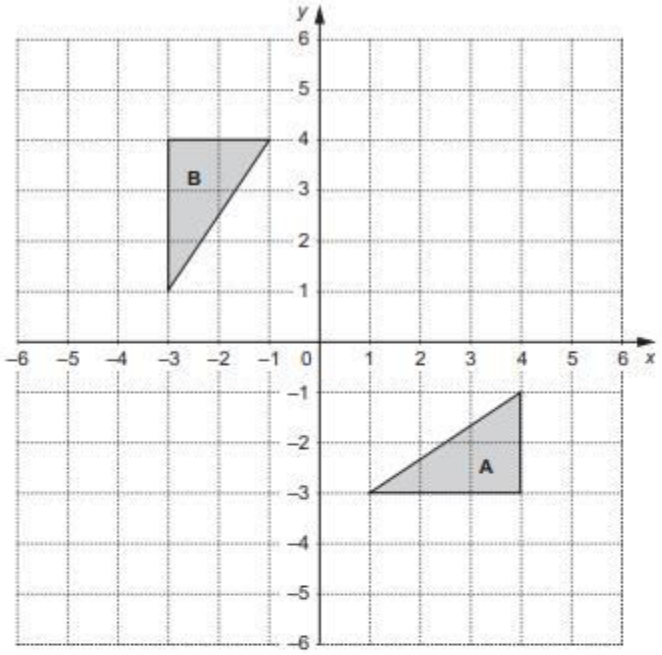
.....

..... **[3]**

OCR GSCE – Thursday 24 May 2018 – Paper 4 (Calculator) Higher Tier

49.

6 Triangles **A** and **B** are drawn on a coordinate grid.



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

.....

..... [2]

(b) Triangle **A** can also be mapped onto triangle **B** using a combination of two transformations:

- a transformation T, followed by
- a reflection in the line $x = 0$.

Describe fully transformation T.

.....

..... [4]

OCR GSCE – Thursday 24 May 2018 – Paper 4 (Calculator) Higher Tier

50.

15 (a) Write $x^2 - 8x + 25$ in the form $(x - a)^2 + b$.

(a) ..... **[3]**

(b) Write down the coordinates of the turning point of the graph of $y = x^2 - 8x + 25$.

(b) (..... , ...) **[2]**

(c) Hence describe the single transformation which maps the graph of $y = x^2$ onto the graph of $y = x^2 - 8x + 25$.

.....

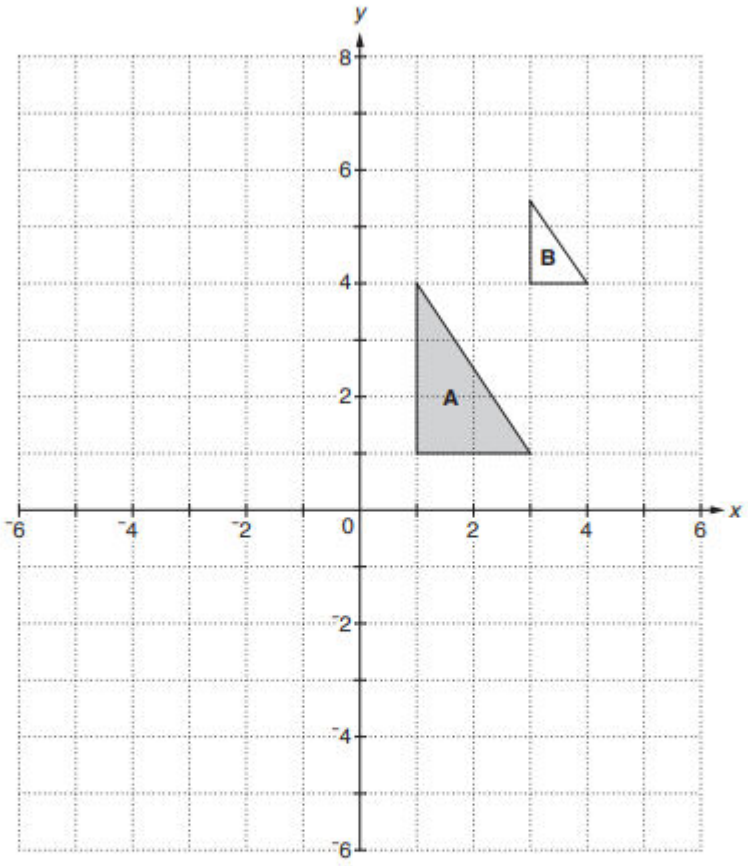
.....

..... **[2]**

OCR GSCE – Tuesday 6 November 2017 – Paper 5 (Non - Calculator) Higher Tier

51.

5 Here is a coordinate grid.



(a) Draw the image of triangle **A** after a reflection in the line $y = -1$. **[2]**

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

.....

..... **[3]**

(c) Complete this statement.

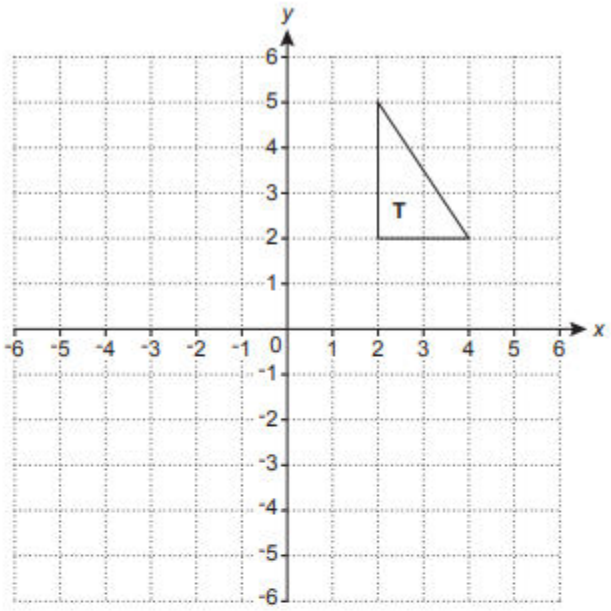
A rotation of 180° around (0, 0) has the same effect as an enlargement by

scale factor ..... with centre of enlargement (....., ...). **[2]**

OCR GSCE – Thursday 25 May 2017 – Paper 4 (Calculator) Higher Tier

52.

11 Triangle **T** is drawn on a coordinate grid.



(a) Translate triangle **T** using the vector $\begin{pmatrix} -3 \\ 1 \end{pmatrix}$. **[2]**

(b) Describe fully the **single** transformation that represents the following.

(i) A rotation with centre (0, 0) of 180° followed by a rotation with centre (0, 0) of 90° clockwise.

.....

..... **[2]**

(ii) A reflection in the *x*-axis followed by a reflection in the *y*-axis.

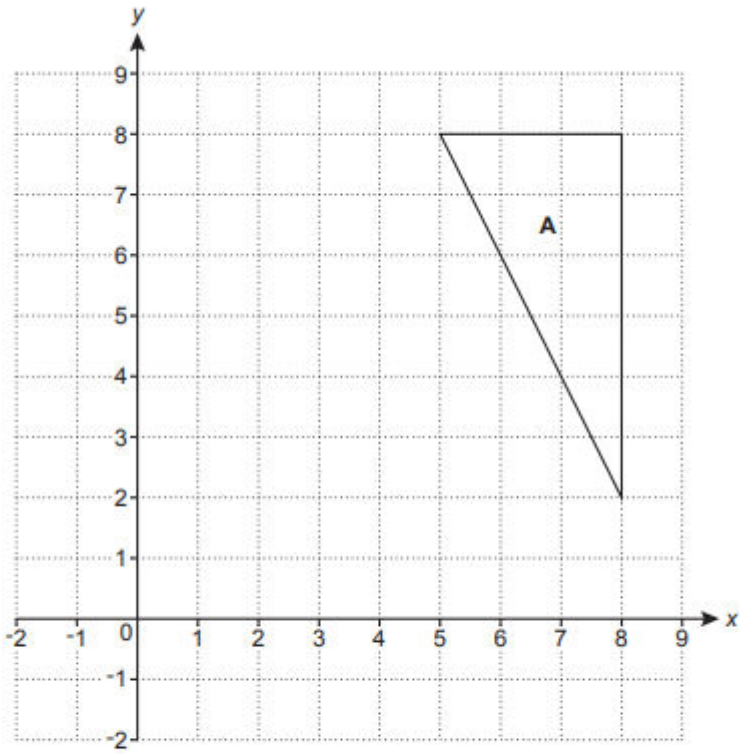
.....

..... **[3]**

OCR GSCE – Tuesday 13 June 2017 – Paper 6 (Calculator) Higher Tier

53.

9 (a) Triangle **A** is drawn on the grid.



Enlarge triangle **A** with scale factor $\frac{1}{3}$ and centre of enlargement (-1, 5). **[3]**

(b) Prism P and prism Q are similar.
The ratio of the surface area of prism P to the surface area of prism Q is 1 : 3.

(i) Jay says

The height of prism P is one third of the height of prism Q.

Explain why he is wrong.

.....

..... **[1]**

(ii) The volume of prism Q is 86 cm^3.

Calculate the volume of prism P.

(b)(ii) ..... cm^3 **[3]**

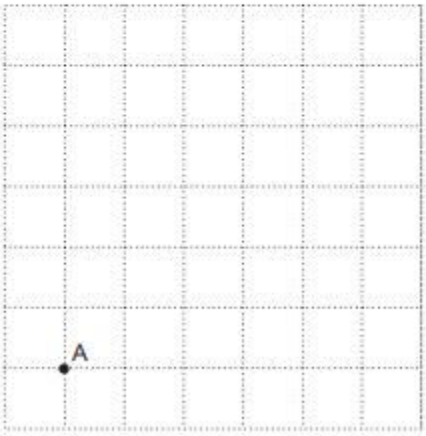
OCR GSCE – Sample Papers – Paper 4 (Calculator) Higher Tier

54.

12 **(a)** Without using a calculator, show that $\sqrt{20} = 2\sqrt{5}$. **[2]**

(b) The point A is shown on the unit grid below.
The point B is $2\sqrt{5}$ units from A and lies on the intersection of two grid lines.

Mark **one** possible position for B.



[3]

AQA GSCE – Tuesday 19 May 2020 – Paper 1 (Non - Calculator) Higher Tier

55.

29 The graph of $y = x^3 + 6$ is translated 4 units to the right.
The translated graph has equation $y = f(x)$

Work out $f(x)$.
Give your answer in the form $x^3 + ax^2 + bx + c$ where a, b and c are integers.

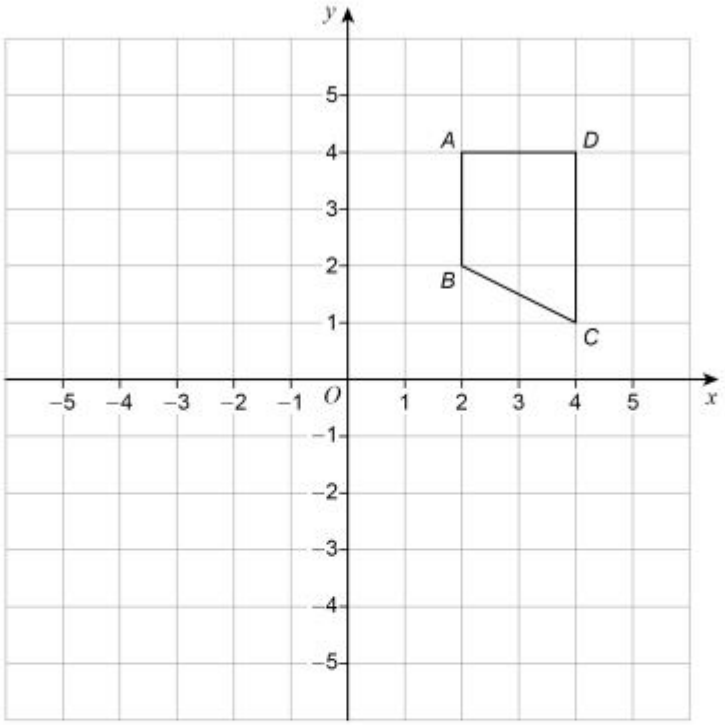
[4 marks]

Answer _____

AQA GSCE – Thursday 4 June 2020 – Paper 2 (Calculator) Higher Tier

56.

24 Quadrilateral *ABCD* is shown.



24 (a) Work out the coordinates of *C* when *ABCD* is

rotated 90° clockwise about O

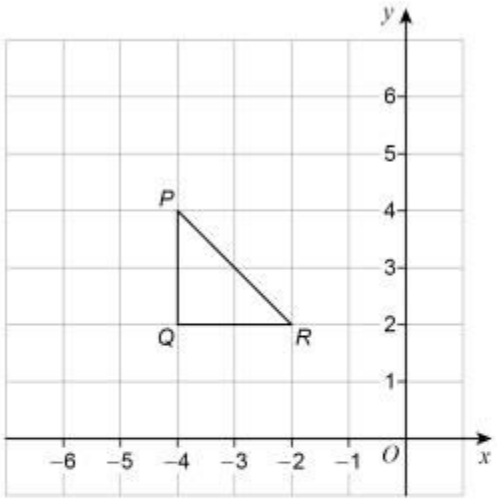
then

translated by $\begin{pmatrix} -6 \\ 2 \end{pmatrix}$

[2 marks]

Answer (_____ , _____)

24 (b) Triangle *PQR* is shown.



When *PQR* is reflected in a line, ***P* and *R*** are invariant points.

Circle the equation of the line.

[1 mark]

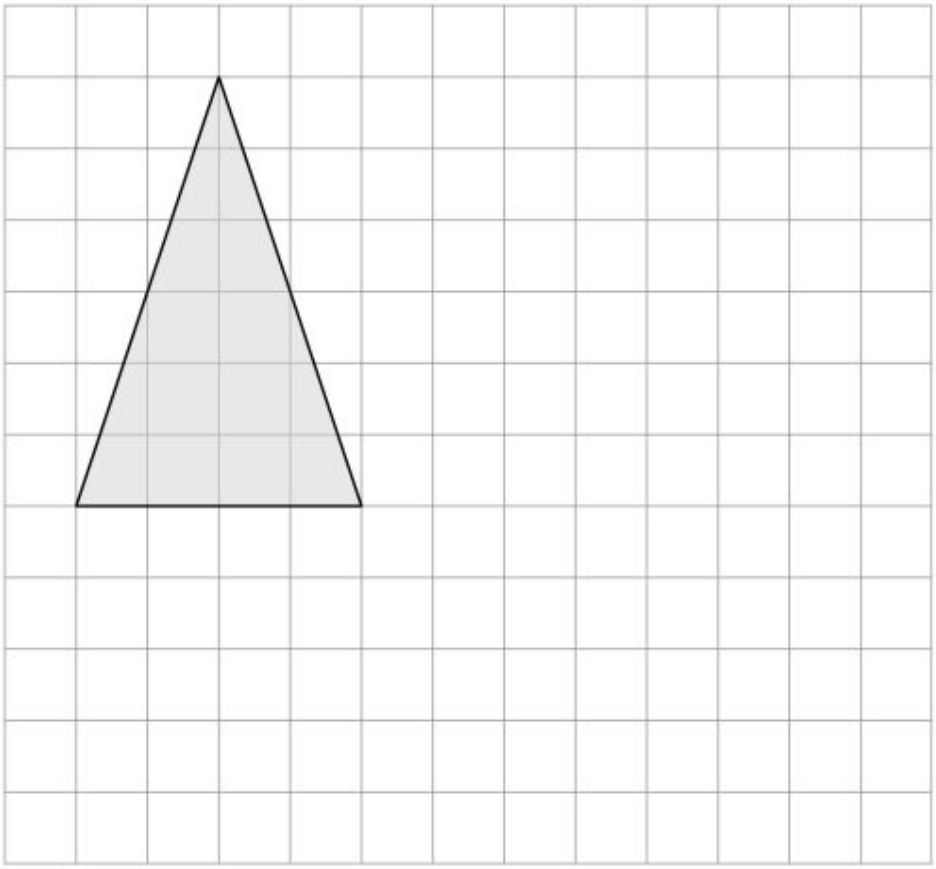
$y = x + 6$ $y = -x$ $y = 2$ $x = -4$

AQA GSCE – Tuesday 11 June 2019 – Paper 3 (Calculator) Higher Tier

57.

5 On the grid, draw an enlargement of the triangle with scale factor $\frac{1}{2}$

[2 marks]

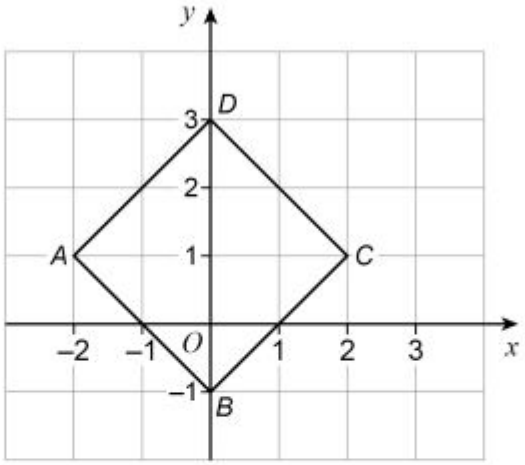


AQA GSCE – Tuesday 11 June 2019 – Paper 3 (Calculator) Higher Tier

58.

25 *ABCD* is a square.

A is (–2, 1) *B* is (0, –1) *C* is (2, 1) *D* is (0, 3)



25 (a) A **single** transformation of *ABCD* is such that

B is mapped to *D*

D is mapped to *B*

A and *C* are invariant points.

Describe fully the transformation.

[2 marks]

25 (b) A different **single** transformation of *ABCD* is such that

B is mapped to *D*

D is mapped to *B*

the only invariant point is (0, 1)

Describe fully the transformation.

[3 marks]

AQA GSCE – Monday 12 November 2018 – Paper 3 (Calculator) Higher Tier

59.

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

In which direction does the shape move?

Circle your answer.

[1 mark]

up down left right

AQA GSCE – Monday 24 May 2018 – Paper 1 (Non - Calculator) Higher Tier

60.

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

Circle the vector that translates B to A.

[1 mark]

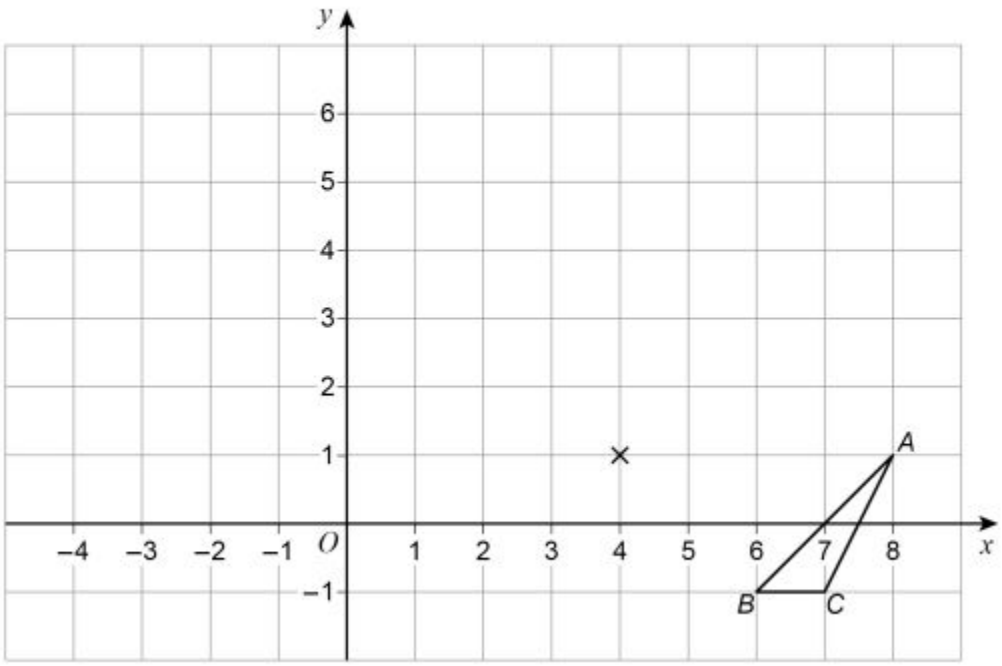
$\begin{pmatrix} -2 \\ 3 \end{pmatrix}$ $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$ $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$ $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$

AQA GSCE – Monday 24 May 2018 – Paper 1 (Non - Calculator) Higher Tier

61.

21 Enlarge triangle *ABC* by scale factor –2, centre (4, 1)

[2 marks]



AQA GSCE – Tuesday 12 June 2018 – Paper 3 (Calculator) Higher Tier

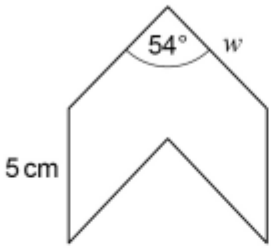
62.

6 A and B are similar shapes.

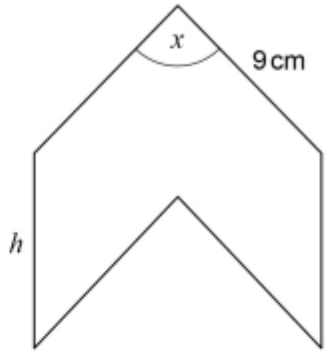
B is an enlargement of A with scale factor 1.5

Not drawn accurately

A



B



Work out the values of x, h and w.

[3 marks]

x = _____ degrees

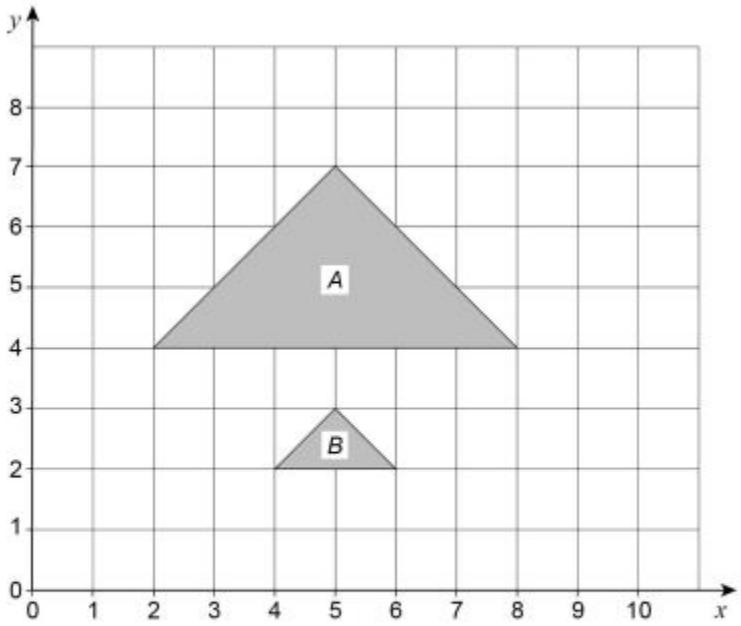
h = _____ cm

w = _____ cm

AQA GSCE – Thursday 6 November 2017 – Paper 2 (Calculator) Higher Tier

63.

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

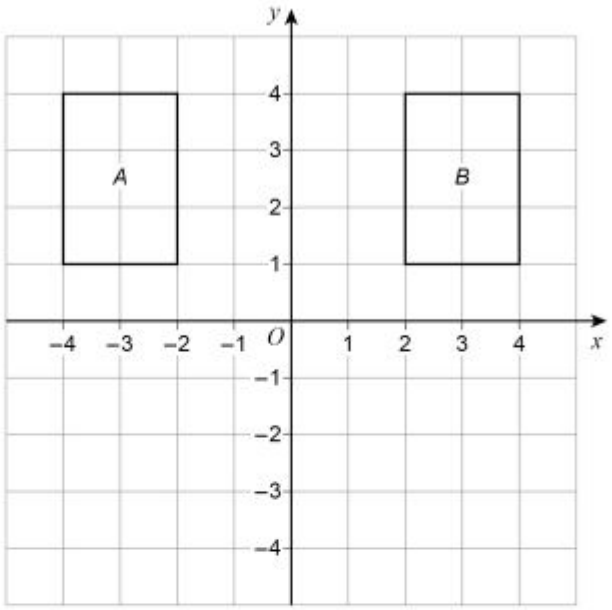


[3 marks]

AQA GSCE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

64.

21 (a) The diagram shows rectangles A and B.



Rectangle A can be mapped to rectangle B by a **single** transformation.

Javed says,

"The **only** single transformation is a reflection in the y-axis because the rectangles are on opposite sides of the y-axis."

Is he correct?

Tick a box.

Yes ☐ No ☐

Give a reason for your answer.

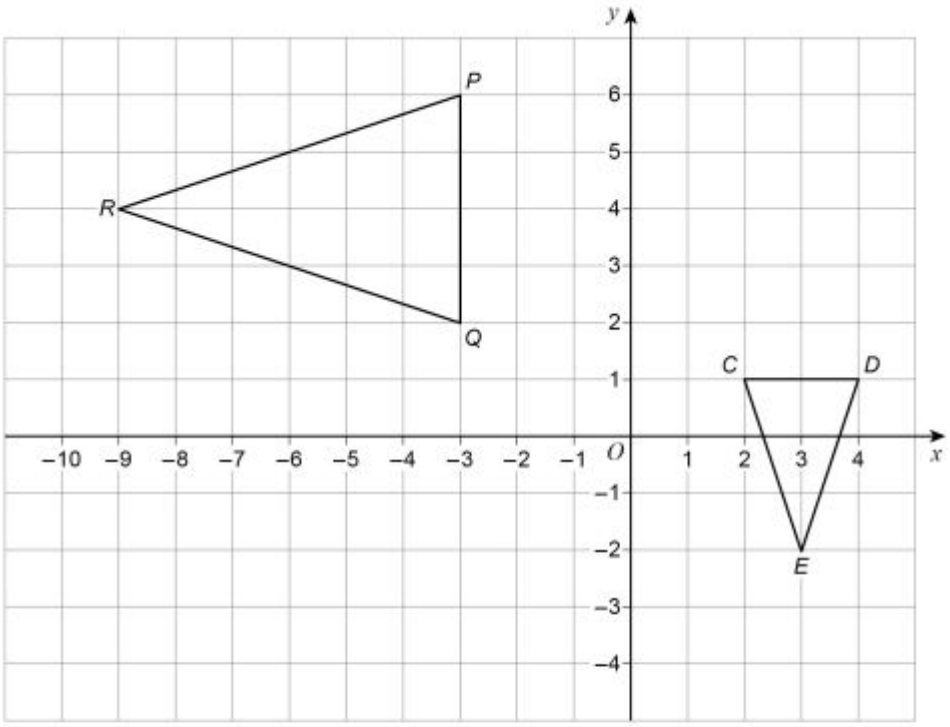
[1 mark]

_____

_____

_____

21 (b) This diagram shows triangles *CDE* and *PQR*.



CDE is mapped to *PQR* by combining two single transformations.

The first is a rotation of 90° anticlockwise about *E*.

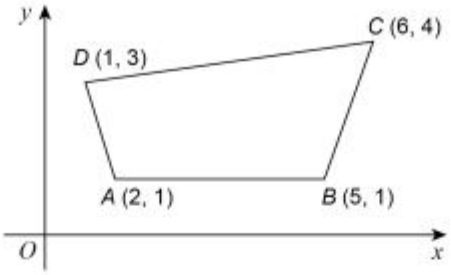
Describe fully the second transformation.

[3 marks]

AQA GSCE – Thursday 8 June 2017 – Paper 2 (Calculator) Higher Tier

65.

26 (a) A sketch of a quadrilateral *ABCD* is shown.



Not drawn accurately

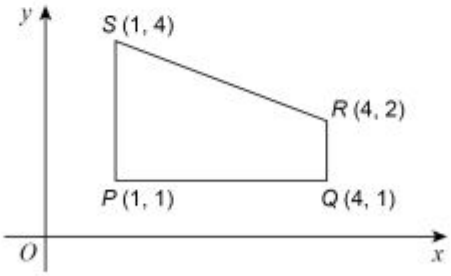
ABCD is enlarged, centre *B*, scale factor $\frac{1}{3}$

Circle the vertex that is invariant.

[1 mark]

A *B* *C* *D*

26 (b) A sketch of a quadrilateral *PQRS* is shown.



Not drawn accurately

PQRS is reflected in the line $y = x$

Circle the vertex that is invariant.

[1 mark]

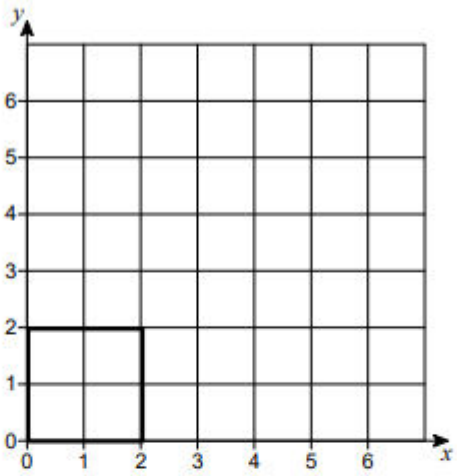
P *Q* *R* *S*

AQA GSCE – Sample Paper 1 (Non - Calculator) Higher Tier

66.

23 Square *OABC* is drawn on a centimetre grid.

O is (0, 0) *A* is (2, 0) *B* is (2, 2) *C* is (0, 2)



23 (a) *OABC* is translated by the vector $\begin{pmatrix} 3 \\ 1 \end{pmatrix}$

Circle the number of invariant points on the perimeter of the square.

[1 mark]

0 1 2 4

23 (b) *OABC* is enlarged, scale factor 2, centre (0, 0)

Circle the number of invariant points on the perimeter of the square.

[1 mark]

0 1 2 4

23 (c) *OABC* is reflected in the line $y = x$

Circle the number of invariant points on the perimeter of the square.

[1 mark]

0 1 2 4