




COUNTDOWN TO YOUR FINAL MATHS EXAM ...

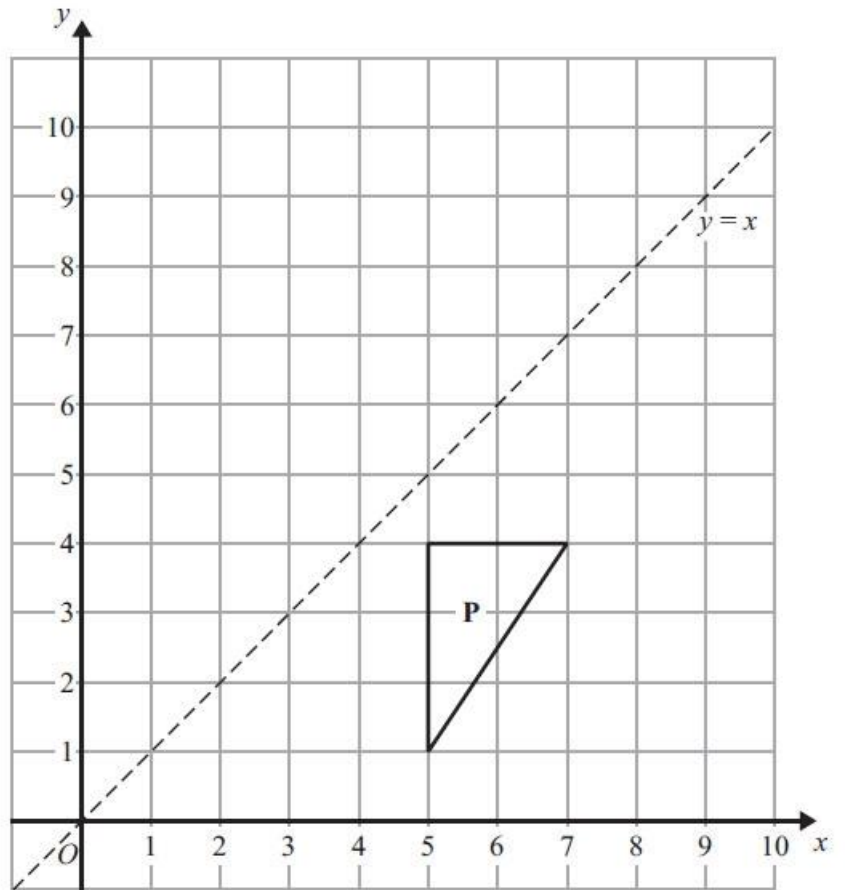
PART 9 (2017)

	Marks	Actual	  
Q1. Reflections & translations	4		
Q2. Reflections & translations	4		
Q3. Reflections, enlargements and angle facts	6		
Q4. Reflections & rotations	5		
Q5. Rotations	3		
Q6. Ratio	4		
Q7. Ratio	3		
Q8. Ratio	3		
Q9. Reflections	3		
Q10. Rotations & translations	3		
Q11. Rotations	3		
Q12. Rotations	3		
Q13. Proportional reasoning & ratio	6		
Q14. Proportional reasoning	4		
Q15. Ratio	7		
Q16. Reflections & rotations	4		
Q17. Symmetry	2		

67

Questions

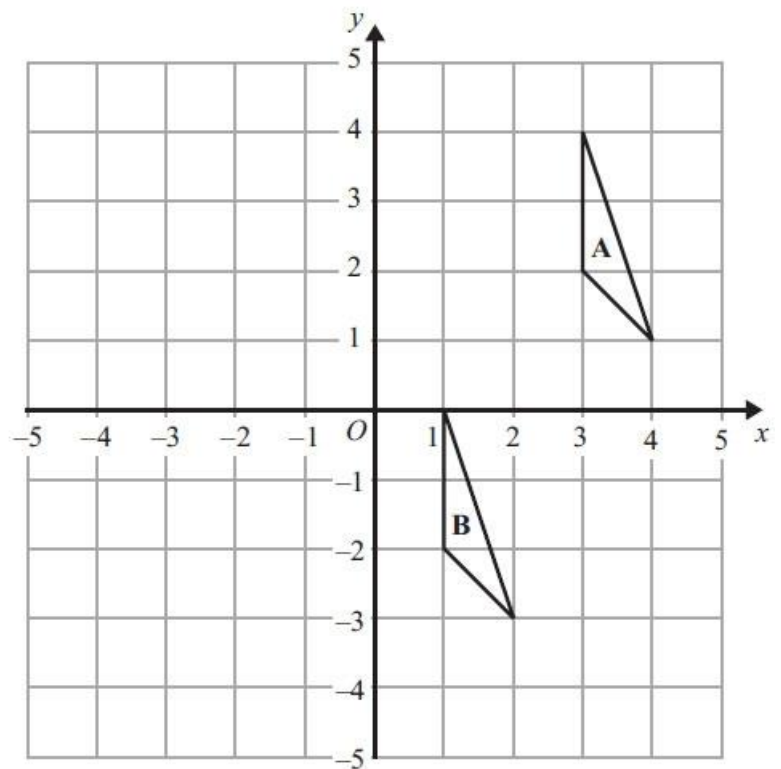
Q1. (a)



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

(2)

(b)

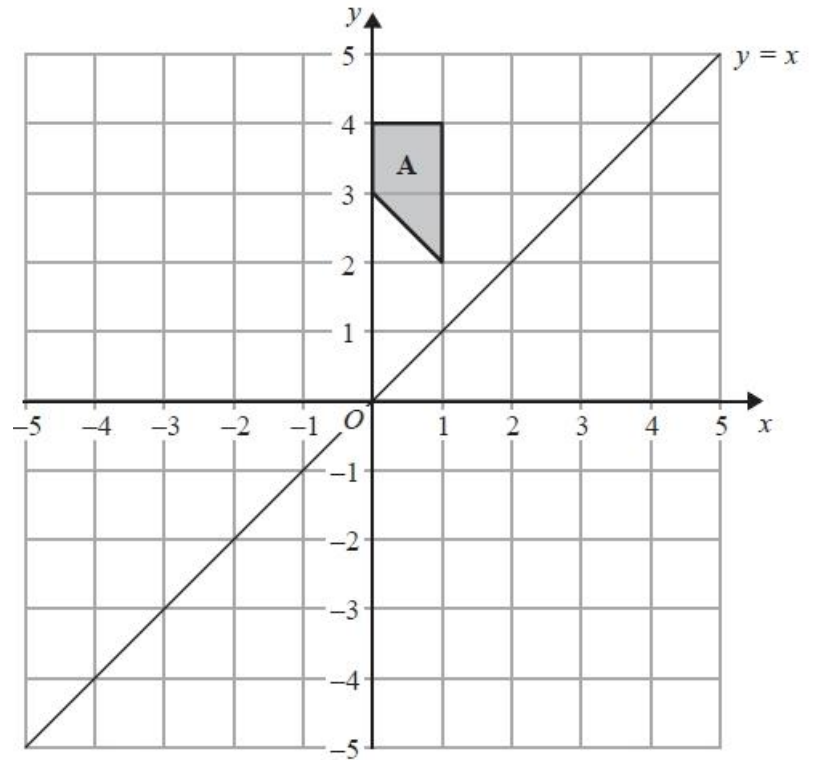


Describe fully the single transformation that maps triangle **A** onto triangle **B**.

(2)

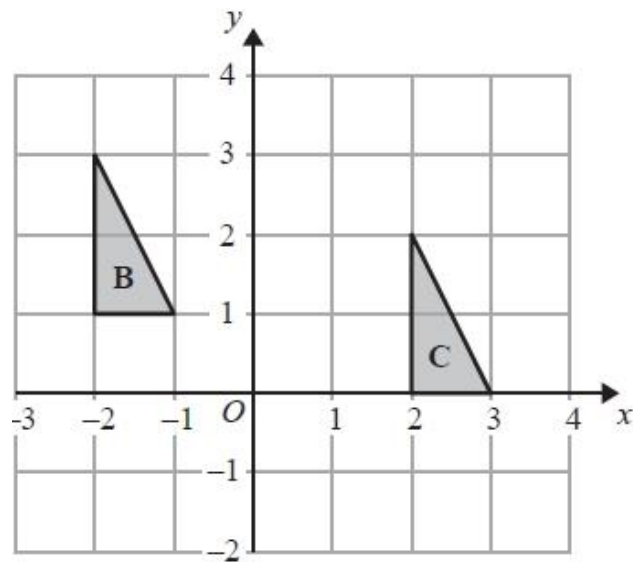
(Total for Question is 4 marks)

Q2.



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

(2)

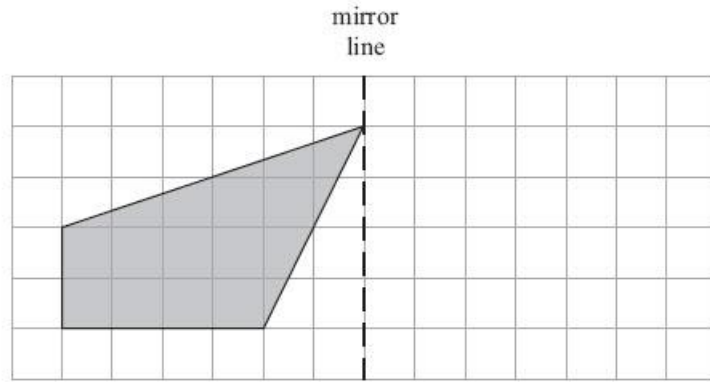


(b) Describe fully the single transformation that maps triangle **B** onto triangle **C**.

(2)

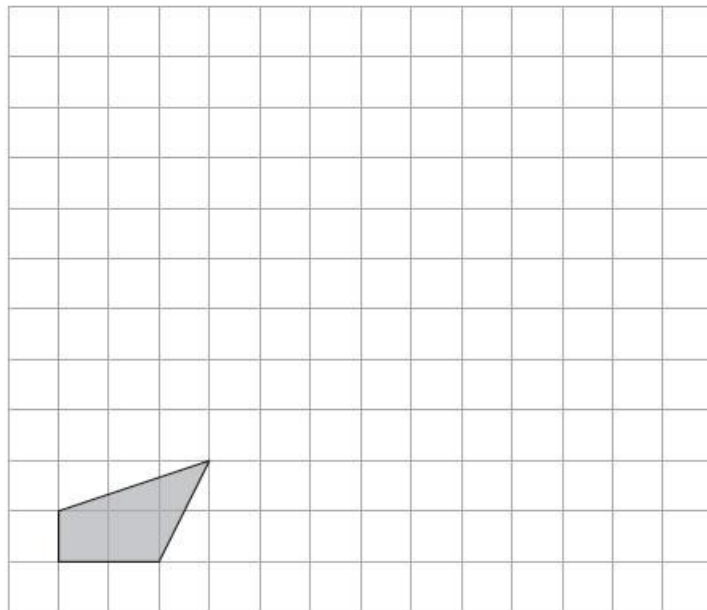
(Total for question = 4 marks)

Q3.



(a) Reflect the shaded shape in the mirror line.

(2)



(b) On the grid, enlarge the shaded shape using a scale factor of 3

(2)

Here is a different shape.

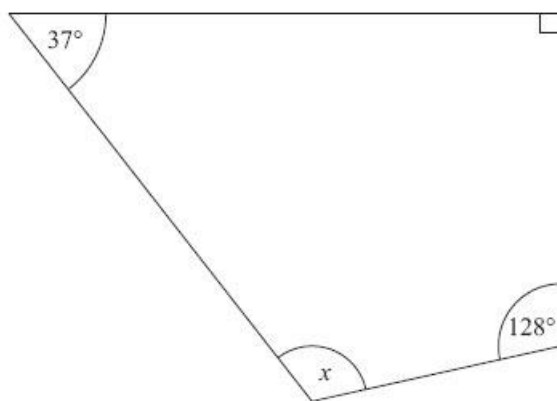


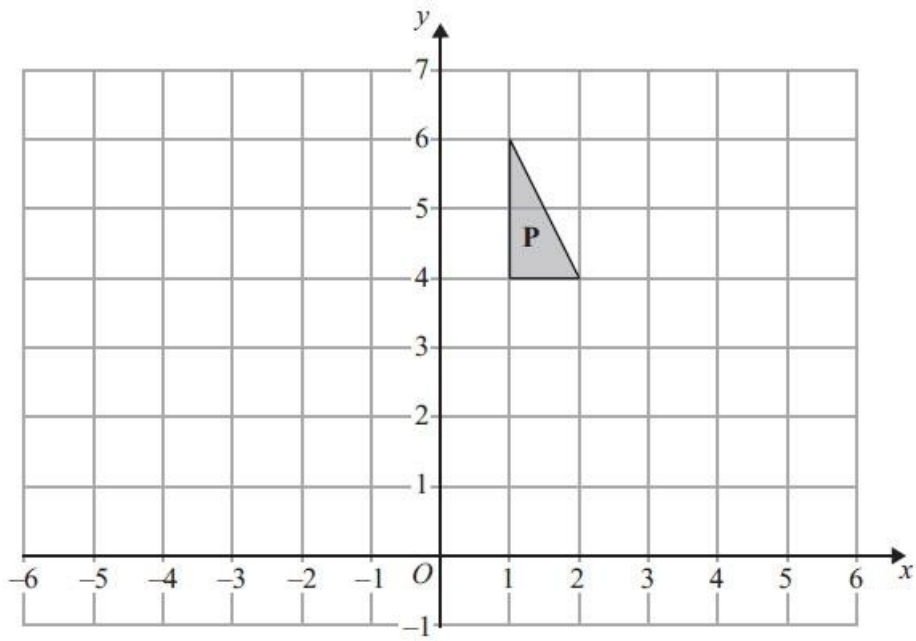
Diagram **NOT** accurately drawn

(c) Work out the size of angle x .

(2)

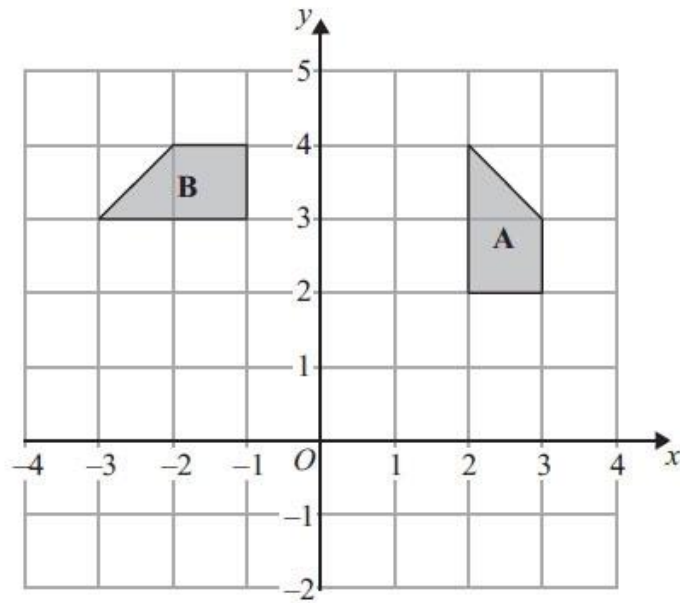
(Total for Question is 6 marks)

Q4.



(a) Reflect shape **P** in the line $x = 3$

(2)



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

(3)

(Total for Question is 5 marks)

Q5. A rectangular piece of card $ABCP$ is placed on a horizontal straight line.



The card is first rotated 90° clockwise about C .
 The card is then rotated 90° clockwise about B .
 The card is then rotated 90° clockwise about A .

Draw the locus of the vertex P .

(Total for question = 3 marks)

Q6. Ewen has 48 white tiles and 16 blue tiles.

(a) Write down the ratio of the number of white tiles to the number of blue tiles.
 Give your ratio in its simplest form.

..... (2)

The cost of each white tile was £2
 The cost of each blue tile was £4

(b) Work out the ratio of the total cost of the white tiles to the total cost of the blue tiles.

..... (2)

(Total for question = 4 marks)

Q7. In a breakfast cereal, 40% of the weight is fruit.
 The rest of the cereal is oats.

(a) Write down the ratio of the weight of fruit to the weight of oats.
 Give your answer in the form $1 : n$.

..... (2)

A different breakfast cereal is made using only fruit and bran.
 The ratio of the weight of fruit to the weight of bran is $1 : 3$

(b) What fraction of the weight of this cereal is bran?

..... (1)

(Total for question is 3 marks)

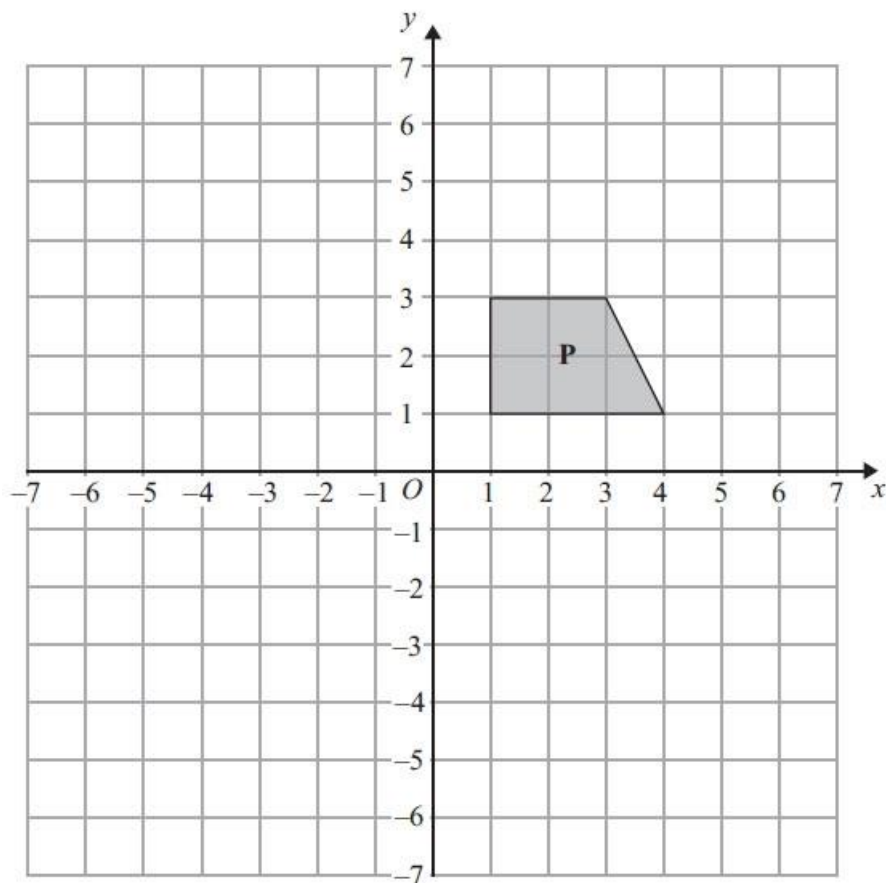
Q8. Liam, Sarah and Emily shared some money in the ratio 2 : 3 : 7

Emily got £80 more than Liam.

How much money did Sarah get?

(Total for question = 3 marks)

Q9.



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**.

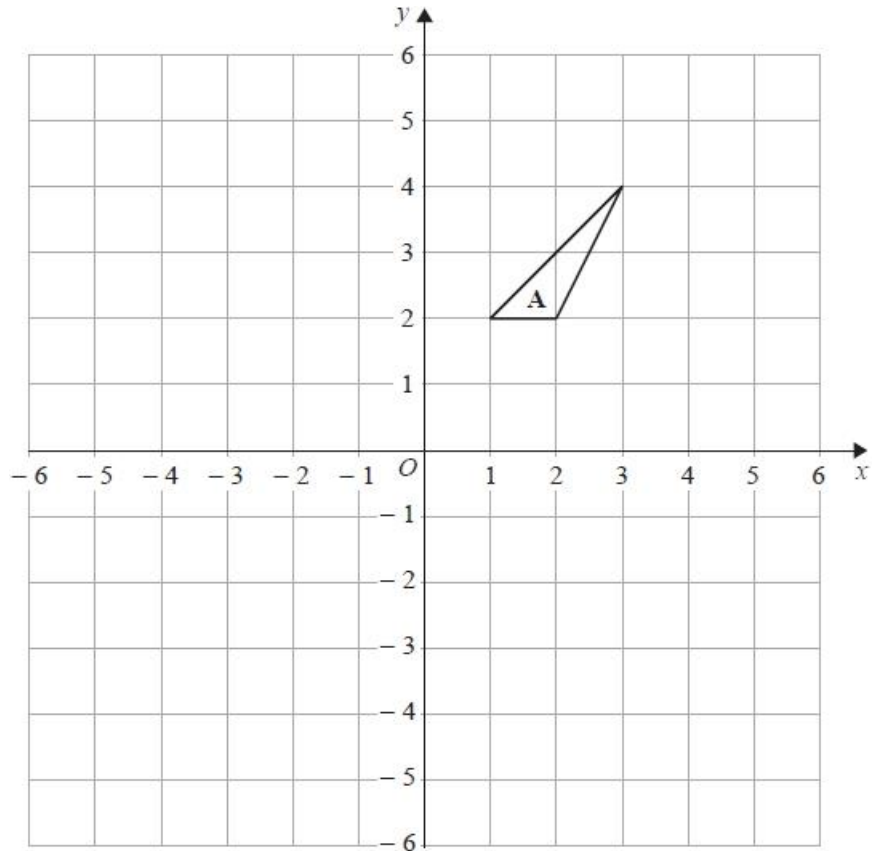
(Total for Question is 3 marks)

Q10.

Triangle **A** is rotated 90° clockwise about the point $(0, 1)$ to give triangle **B**.

Triangle **B** is translated by the vector $\begin{pmatrix} -3 \\ -1 \end{pmatrix}$ to give triangle **C**.

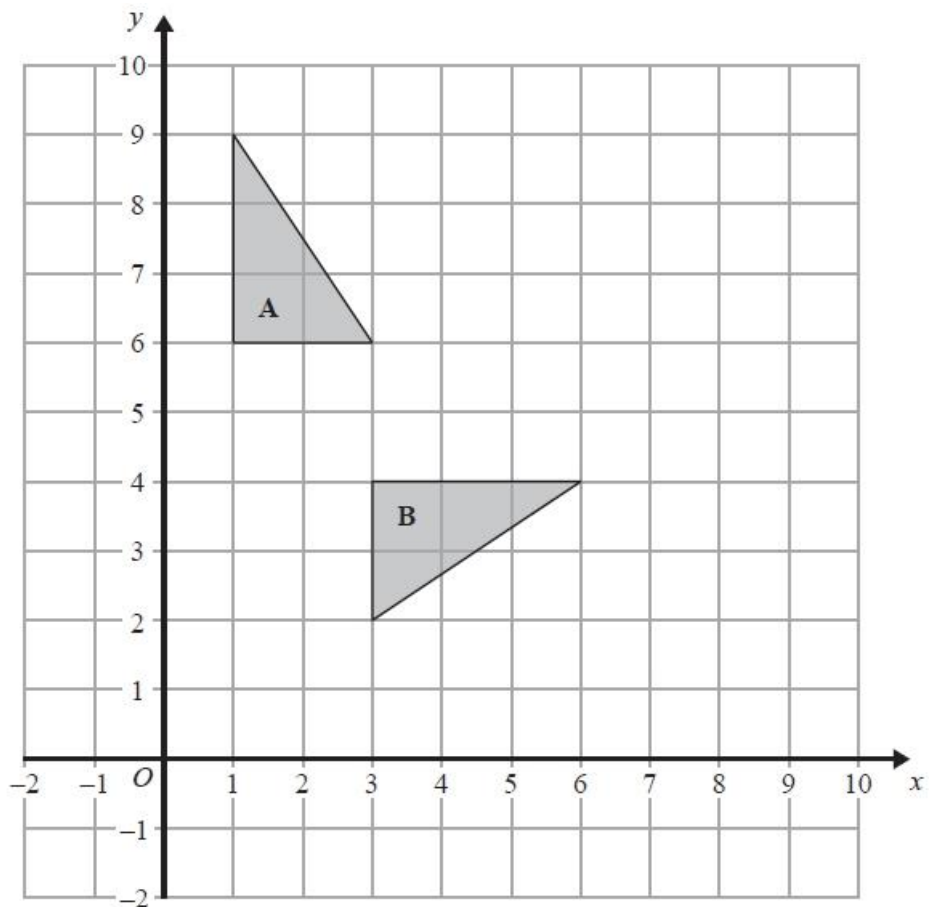
Describe fully the single transformation that maps triangle **A** onto triangle **C**.



(3)

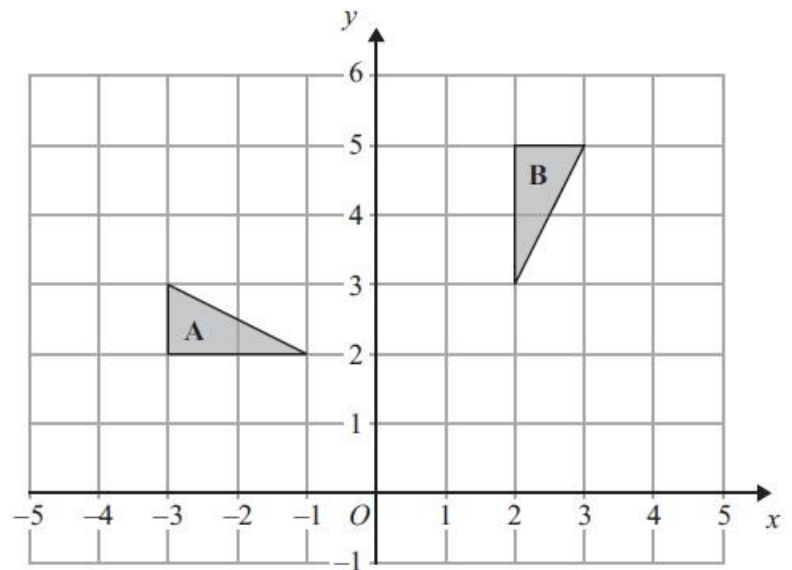
(Total for question = 3 marks)

Q11. Describe fully the single transformation that maps triangle **A** onto triangle **B**.



(Total for question = 3 marks)

Q12. Describe fully the single transformation which maps triangle **A** onto triangle **B**.



(Total for Question is 3 marks)

Q13. The cost of 3 calculators is £26.85

(a) Work out the cost of 5 of these calculators.

(2)

The ratio of the number of boys to the number of girls in a class is 3 : 4

(b) What fraction of the class is boys?

(1)

Shane and Gemma share 35 sweets in the ratio 1 : 4

Gemma eats 10 of her sweets and then gives Shane $\frac{1}{2}$ of the sweets she has left.

(c) How many sweets does Shane have now?

(3)

(Total for question = 6 marks)

Q14. Susie has to deliver some packages and some parcels.

The total number of packages is 4 times the number of parcels.
The total number of packages and parcels is 40

Each parcel has a weight of 1.5 kg.
The total weight of the packages and parcels is 37.6 kg.

Each of the packages has the same weight.

Work out the weight of each package.

..... kg

(Total for Question is 4 marks)

Q15. Build-a-mix makes concrete.

1 cubic metre of concrete has a weight of 2400 kg.

15% of the concrete is water.

The rest of the ingredients of concrete are cement, sand and stone.
The weights of these ingredients are in the ratio 1 : 2 : 5

(a) Work out the weight of cement, of sand and of stone in 1 cubic metre of concrete.

cement = kg

sand = kg

stone = kg

(4)

Build-a-mix needs to make 30 cubic metres of concrete.
Build-a-mix has only got 6.5 tonnes of cement.

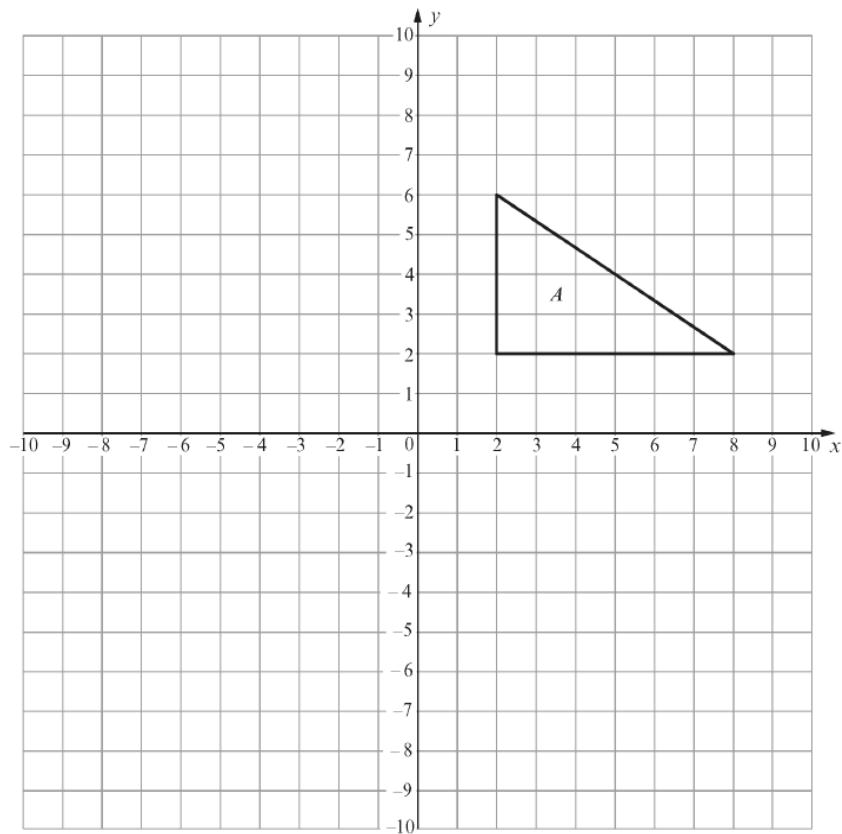
(b) Will this be enough cement for Build-a-mix to make 30 cubic metres of concrete? You must show all of your working.

(3)

(Total for Question is 7 marks)

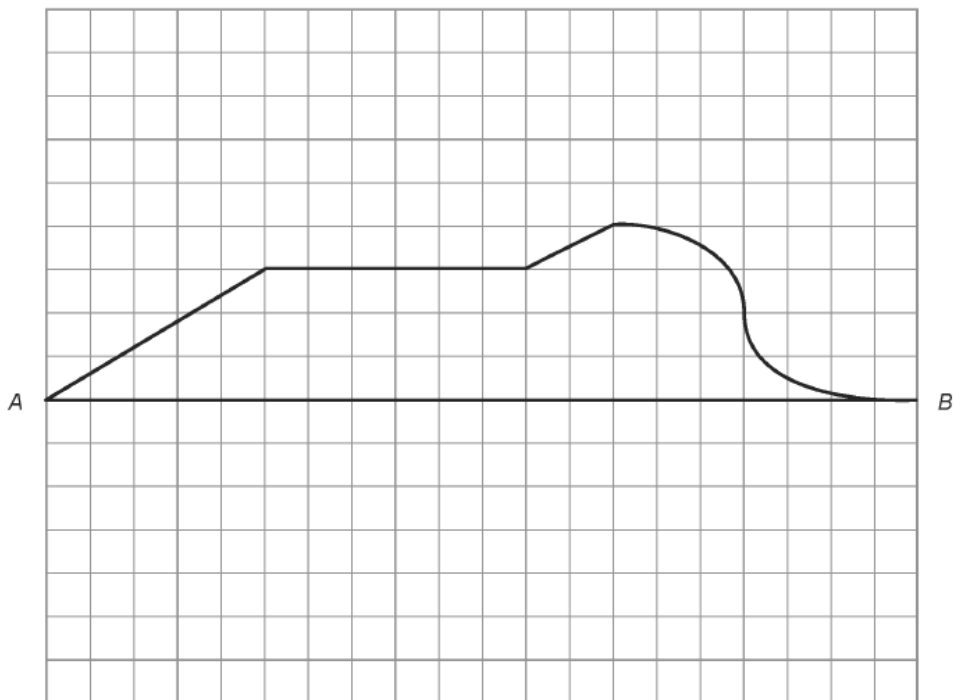
Q16. Reflect triangle A in the x-axis and label your answer B.

Then rotate your triangle B by 90° clockwise about the origin. Label your final answer C.



(4)
(Total for question = 4 marks)

Q17. Complete the following diagram so that AB is a line of symmetry.



(2)
(Total for question = 2 marks)