

General Certificate of Secondary Education  
2014

## Mathematics

Unit T5 Paper 1

(Non-calculator)

Foundation Tier

[GMT51]



MV18

FRIDAY 30 MAY, 1.30pm–2.30pm

### TIME

1 hour, plus your additional time allowance.

### INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

**You must answer the questions in the spaces provided.**

Complete in blue or black ink only.

Answer **all seventeen** questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

**You must not** use a calculator for this paper.

## INFORMATION FOR CANDIDATES

The total mark for this paper is 50.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Functional Elements will be assessed in this paper.

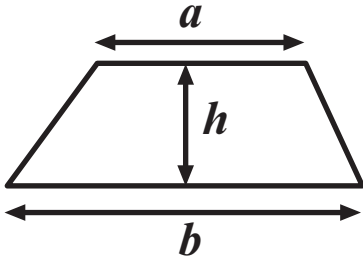
Quality of written communication will be assessed in **question 5**.

You should have a ruler, compasses and a protractor.

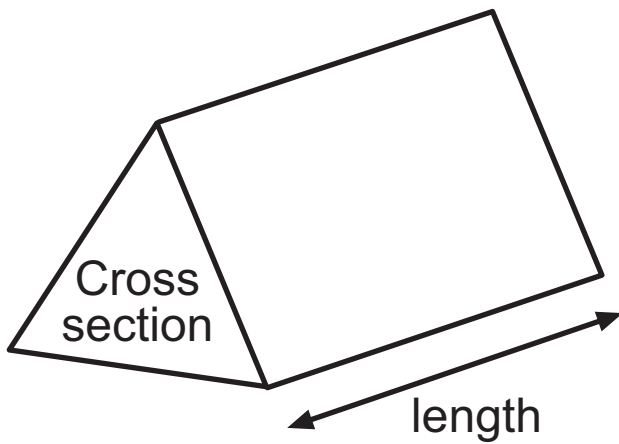
The Formula Sheet is on page 3.

# Formula Sheet

$$\text{Area of trapezium} = \frac{1}{2} (a + b)h$$



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$

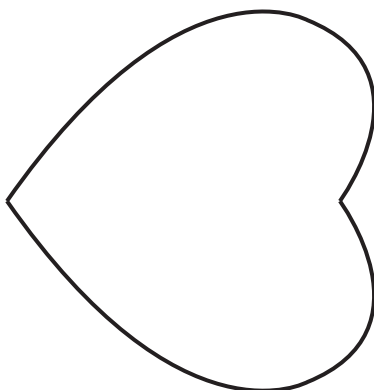


1 Draw all the lines of symmetry on each of the figures shown below.

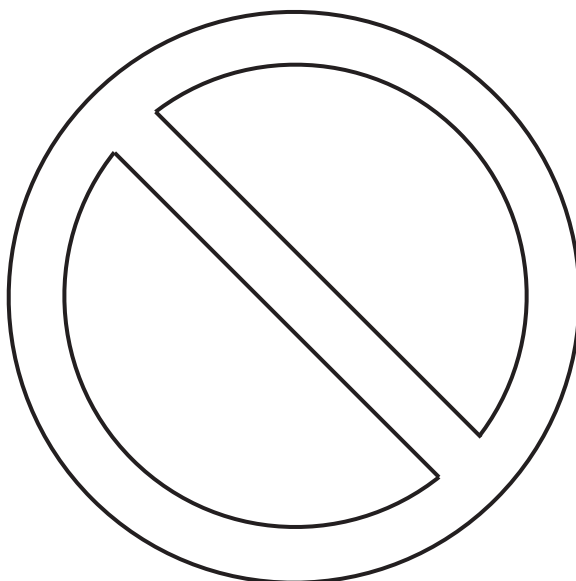
(a) [1 mark]



(b) [1 mark]



(c) [2 marks]



2 (a) Estimate  $\frac{98 \times 99}{2.1}$  [3 marks]

Answer \_\_\_\_\_

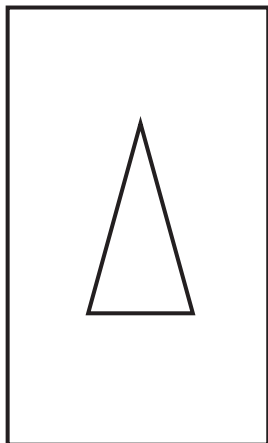
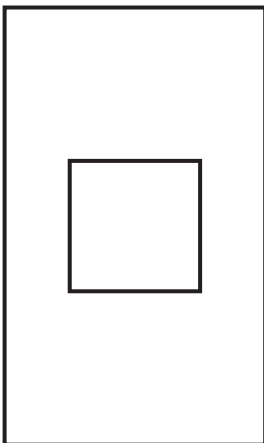
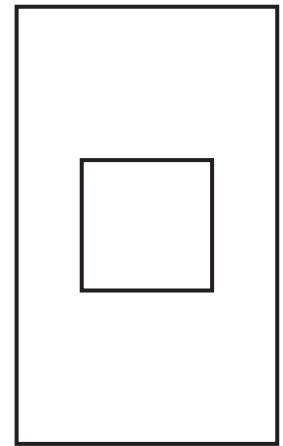
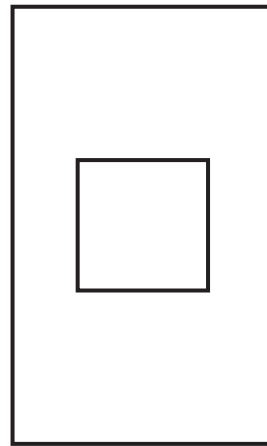
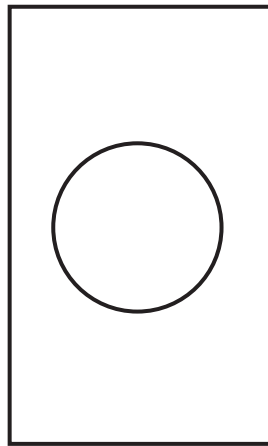
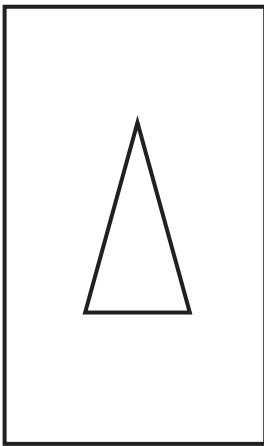
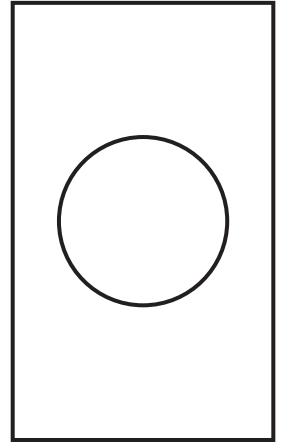
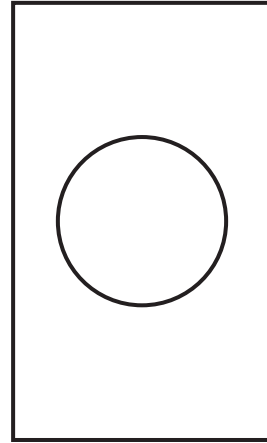
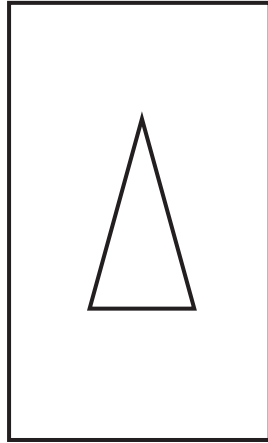
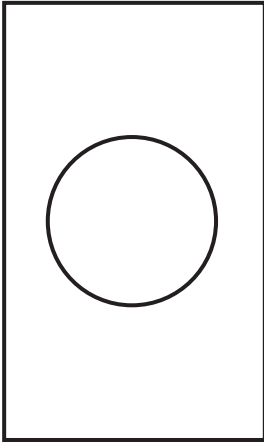
(b) Estimate  $\sqrt{75}$  [1 mark]

Answer \_\_\_\_\_

3 Jill bought a new jacket.  
She paid £35 deposit and £10 per month for 9 months.  
How much did she pay in total? [2 marks]

Answer £ \_\_\_\_\_

4 Here is a set of 10 rectangular picture cards.



The cards are shuffled and placed face down.

One card is then turned face up.

**(a)** Which shape is most likely to be turned up? [1 mark]

Answer \_\_\_\_\_

**(b)** Which shapes are equally likely to be turned up?  
[1 mark]

Answer \_\_\_\_\_ and

\_\_\_\_\_

**Quality of written communication will be assessed in this question.**

- 5** Bill earns £300 per week.  
Bob earns £1250 per month.

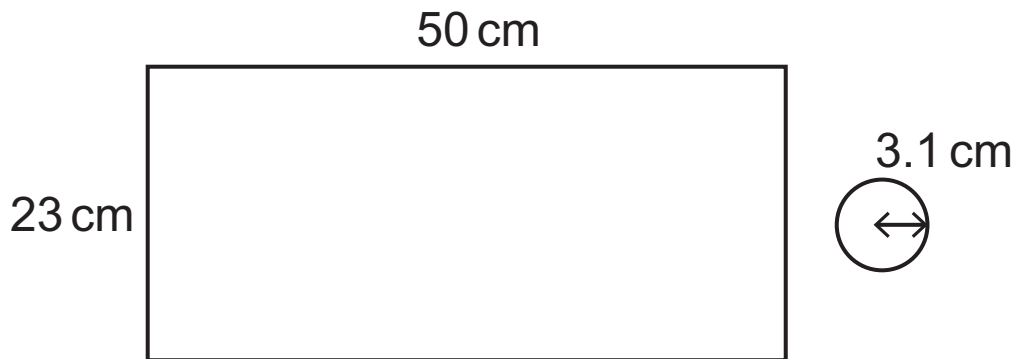
Who earns more per year? [4 marks]

**Show your working.**

Answer \_\_\_\_\_

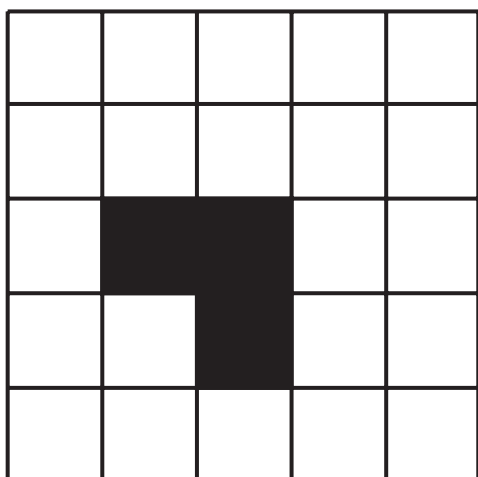


- 6 Estimate the number of circular discs of radius 3.1 cm which can be placed flat, without overlapping, in the rectangular tray of length 50 cm and width 23 cm. [3 marks]

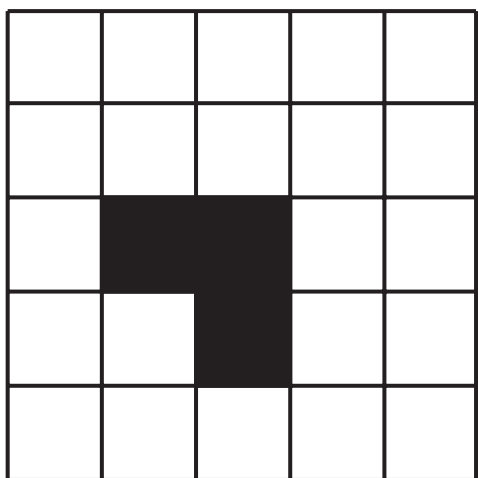


Answer \_\_\_\_\_

- 7 (a) In the diagram below shade in one more square so that the new shape has only one line of symmetry. [1 mark]



- (b) In the diagram below shade in one more square so that the new shape has rotational symmetry of order two. [1 mark]



## 8 Evaluate

(a)  $4 + 3 \times 5$  [1 mark]

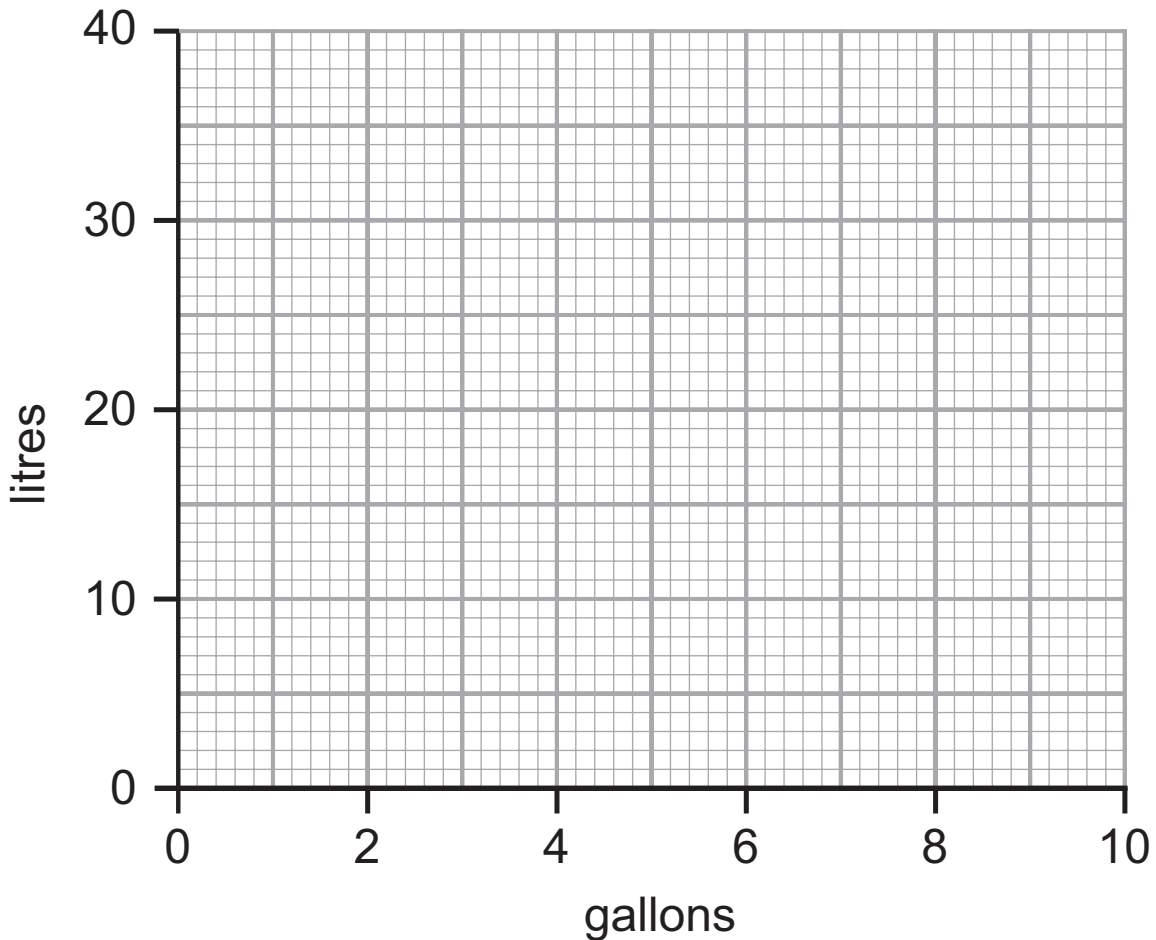
Answer \_\_\_\_\_

(b)  $6 + 10 \div 2 - 3$  [1 mark]

Answer \_\_\_\_\_

9 Two gallons is approximately nine litres.

(a) Use this information to draw a conversion graph. [2 marks]



(b) Use your graph to change

(i) 24 litres to gallons [1 mark]

Answer \_\_\_\_\_ gallons

(ii) 14 gallons to litres [1 mark]

Answer \_\_\_\_\_ litres

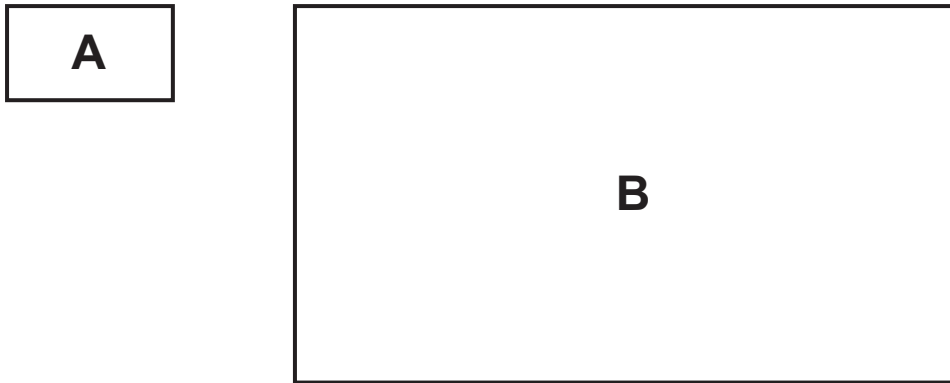
**(c)** Complete the sentence to show how gallons can be converted to litres. [1 mark]

To change gallons to litres you multiply by

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**10** In the diagram rectangle **A** has been enlarged by a scale factor of 4 to give rectangle **B**.

How many times bigger is the area of rectangle **B** than the area of rectangle **A**? [2 marks]

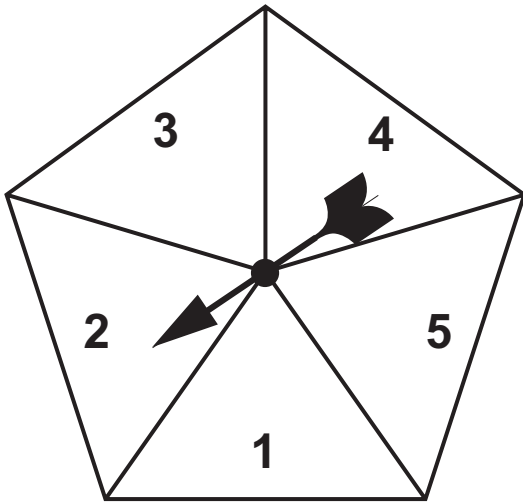


Answer \_\_\_\_\_ times bigger

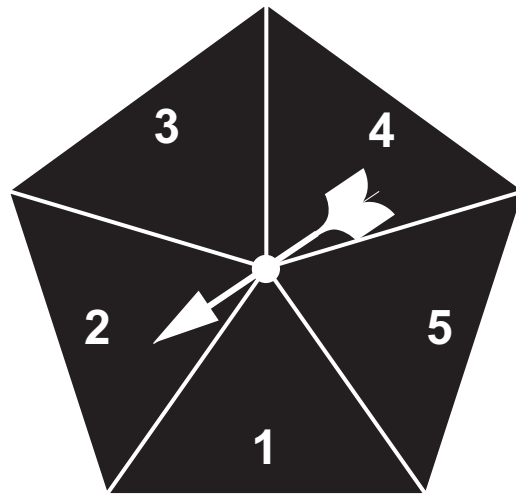
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**(Questions continue overleaf)**

**11** A game is played with two coloured spinners, one white and the other blue. The numbers 1, 2, 3, 4 and 5 are marked on each spinner.



**WHITE  
SPINNER**



**BLUE  
SPINNER**

Each spinner is spun and a score is found by adding together the numbers indicated.

**(a)** Complete the table to show all the possible total scores. [2 marks]

	5					
	4					
WHITE	3	4	5			
	2	3	4	5		
	1	2	3	4	5	6
		1	2	3	4	5
		BLUE				



**(b)** Find the probability of having a total score

**(i)** less than 5, [1 mark]

Answer \_\_\_\_\_

**(ii)** which is an odd number. [2 marks]

Answer \_\_\_\_\_

**12** Work out the value of  $\frac{Q^2(4-R)}{3}$  when  $Q = -3$  and  $R = 6$   
[3 marks]

Answer \_\_\_\_\_

**13 (a)** Given that  $24 \times 640 = 15360$   
write down the answer only to  $2.4 \times 64$  [1 mark]

Answer \_\_\_\_\_

**(b)** Given that  $\frac{25600}{80} = 320$   
write down the answer only to  $\frac{2560}{8}$  [1 mark]

Answer \_\_\_\_\_

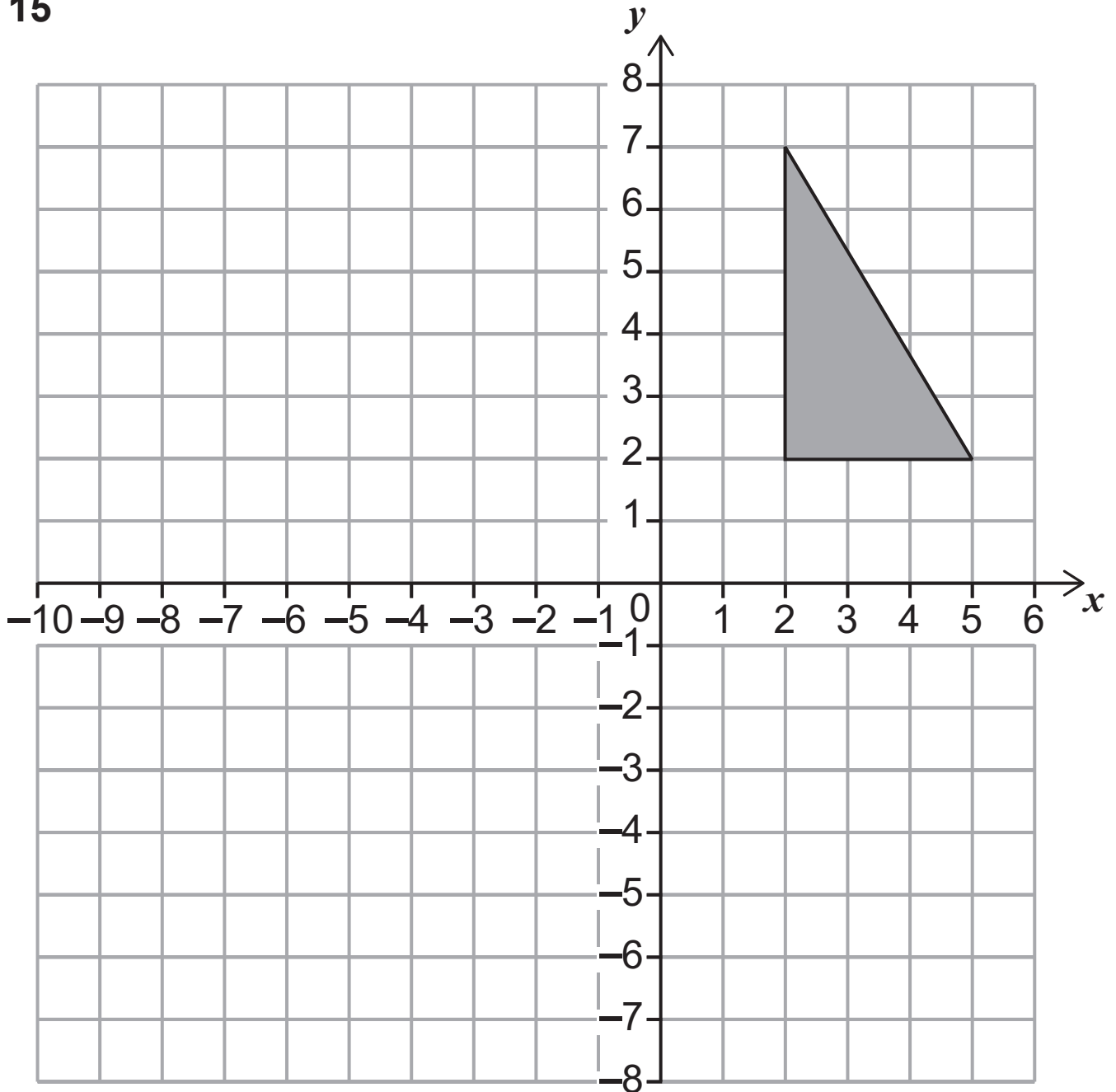
**14 (a)** Calculate  $600 \div 0.2$  [2 marks]

Answer \_\_\_\_\_

**(b)** Without working out the answer to  $40 \times 0.752$  write down whether it will be greater or less than 40. Explain your answer clearly. [2 marks]

\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15



Draw and shade the image of the triangle after a  $90^\circ$  anticlockwise rotation about the point  $(-1, 1)$ . [2 marks]

**16** Niamh carries out an experiment dropping pieces of toast to see if they land jam up or jam down. Here are her results.

Number of trials	10	50	100	500	1000
Jam Down	4	29	61	308	623
Relative Frequency	0.4		0.61	0.616	0.623

**(a)** Complete the missing relative frequency value in the table. [1 mark]

**(b)** From the results of Niamh's experiment would you say that a piece of toast is more likely to land jam up or jam down? Explain your answer. [1 mark]

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17 Make  $x$  the subject in  $y - kx = t$  [2 marks]

Answer  $x =$  \_\_\_\_\_

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**THIS IS THE END OF THE QUESTION PAPER**

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For Examiner's use only	
Question Number	Marks
1	
2	
3	
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8	
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11	
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17	
<b>Total Marks</b>	

Examiner Number

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