

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										



General Certificate of Secondary Education  
Foundation Tier  
June 2014

# Mathematics (Linear)

4365/2F

## Paper 2

Friday 13 June 2014 9.00 am to 10.45 am

**F**

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>• a calculator</li> <li>• mathematical instruments.</li> </ul>	
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### Time allowed

- 1 hour 45 minutes

### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

### Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 105.
- The quality of your written communication is specifically assessed in Questions 7, 14, 20 and 24. These questions are indicated with an asterisk (\*).
- You may ask for more answer paper, tracing paper and graph paper. These must be tagged securely to this answer book.

### Advice

- In all calculations, show clearly how you work out your answer.

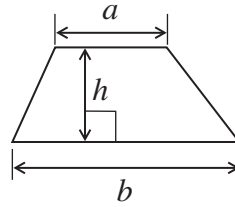
For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
16 – 17	
18 – 19	
20 – 21	
22 – 23	
24 – 25	
26 – 27	
28 – 29	
30	
TOTAL	



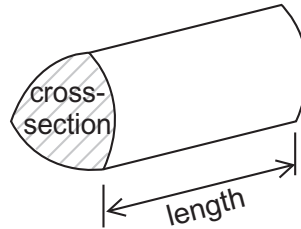
J U N 1 4 4 3 6 5 2 F 0 1

**Formulae Sheet: Foundation Tier**

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



**Volume of prism** = area of cross section  $\times$  length



Answer **all** questions in the spaces provided.

**1** Here is a list of numbers.

255          431          293          388          107          205

**1 (a)** Which is the largest number?  
Circle your answer.

**[1 mark]**

255          431          293          388          107          205

**1 (b)** Which is the even number?  
Circle your answer.

**[1 mark]**

255          431          293          388          107          205

**1 (c)** Use two of the numbers to make a correct addition.

**[1 mark]**

..... + ..... = 400

**1 (d)** Use two of the numbers to make a correct subtraction.

**[1 mark]**

..... - ..... = 50



**2** A shop sells these 15 ice-creams.

Chocolate	Vanilla	Vanilla	Vanilla	Strawberry
Vanilla	Chocolate	Vanilla	Strawberry	Strawberry
Chocolate	Chocolate	Strawberry	Vanilla	Chocolate

**2 (a)** Complete the table.

**[3 marks]**

Flavour	Tally	Frequency
Chocolate		
Vanilla		
Strawberry		
		Total = 15



2 (b)

The shop sells

7 cones

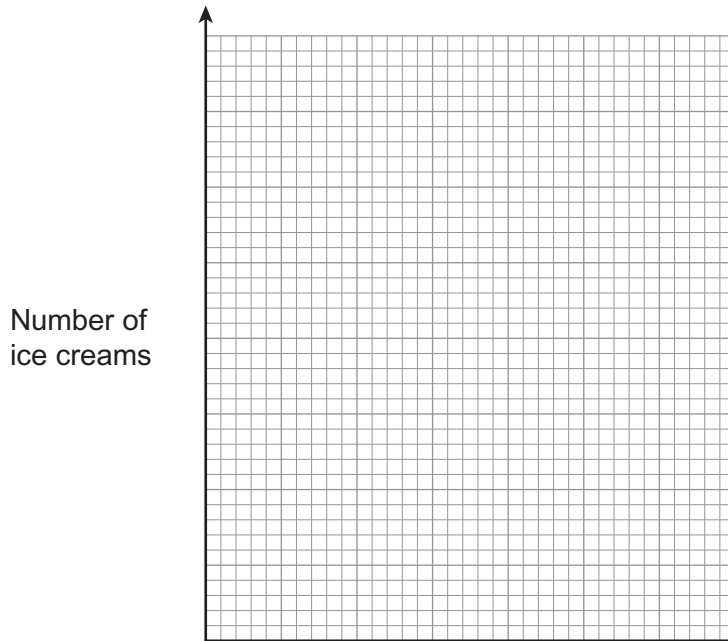
5 tubs

3 wafers.

Show this information on a bar chart.

[4 marks]

Ice creams



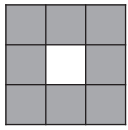
Turn over for the next question

7

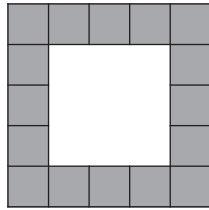
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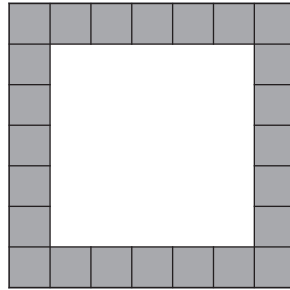
3 Here is a sequence of patterns.



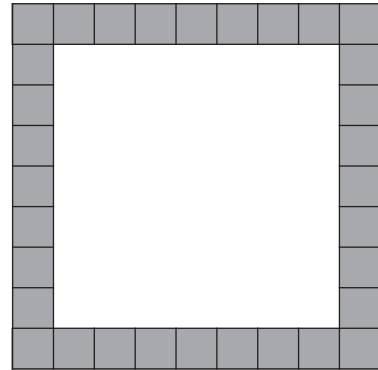
Pattern 1



Pattern 2



Pattern 3



Pattern 4

3 (a) Complete the table.

[2 marks]

	Pattern 1	Pattern 2	Pattern 3	Pattern 4
<b>Number of shaded squares</b>	8			

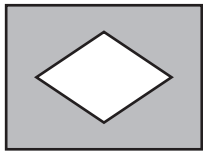
3 (b) How many shaded squares are in Pattern 7?

[1 mark]

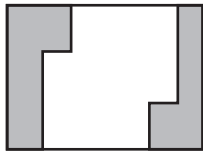
Answer .....



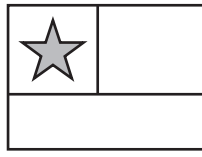
4 Here are five flags.



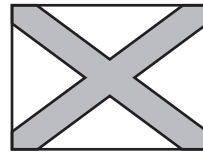
A



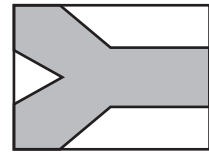
B



C



D



E

4 (a) Which **three** flags have line symmetry?

[2 marks]

Answer ....., ..... and .....

4 (b) Which **two** flags do **not** have rotational symmetry?

[2 marks]

Answer ..... and .....

4 (c) Which flag has rotational symmetry but **not** line symmetry?

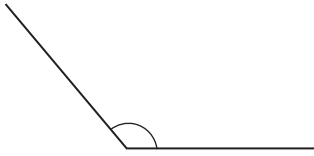
[1 mark]

Answer .....

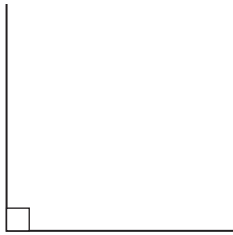


5

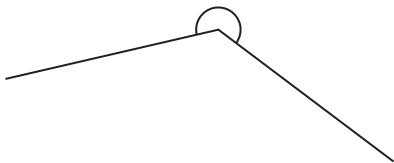
Draw a line to match each angle to the correct name.

**[2 marks]**

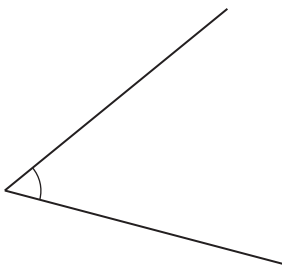
right angle



reflex angle



acute angle



obtuse angle





6 The table shows the cost of posting parcels.

Weight of parcel (grams)	First Class	Second Class
0 – 100	£1.58	£1.33
101 – 250	£1.96	£1.72
251 – 500	£2.48	£2.16
501 – 750	£3.05	£2.61
751 – 1000	£3.71	£3.15

6 (a) A parcel weighs 400 grams.

What is the cost of sending it First Class?

[1 mark]

Answer £ .....

6 (b) Jake wants to post a 600 gram parcel and an 800 gram parcel. He posts them Second Class. He pays with a £10 note.

How much change should he get?

[3 marks]

.....

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.....

Answer £ .....

6

Turn over ►



7

Football tickets	
Adult	£58.90
Junior	£21.50
Over 65	£46.90

\*7 (a) How much does one Adult ticket and one Junior ticket cost altogether?

[2 marks]

.....  
.....

Answer £ .....

7 (b) Jose buys some Over 65 tickets.  
They cost £187.60

How many does he buy?

[2 marks]

.....  
.....

Answer .....



Football tickets	
Adult	£58.90
Junior	£21.50
Over 65	£46.90

**7 (c)** Kim buys **three** tickets.  
They cost £89.90

What types of tickets does she buy?  
You **must** show your working.

**[2 marks]**

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Answer .....

**Turn over for the next question**

6
---

**Turn over ▶**



**8** Jade and Ben both have jobs.

Their pay in £ is worked out using this formula.

$$\text{pay} = 8 \times \text{number of hours worked} + \text{bonus}$$

Their bonus is worked out using this table.

<b>Whole number of hours worked</b>	1 to 5	6 to 10	11 to 15	16 to 20
<b>Bonus</b>	£10	£20	£30	£40

**8 (a)** Jade worked 7 hours.

Work out her pay.

**[3 marks]**

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Answer £ .....

**8 (b)** Ben is paid £150

How many hours did he work?

**[3 marks]**

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Answer ..... hours

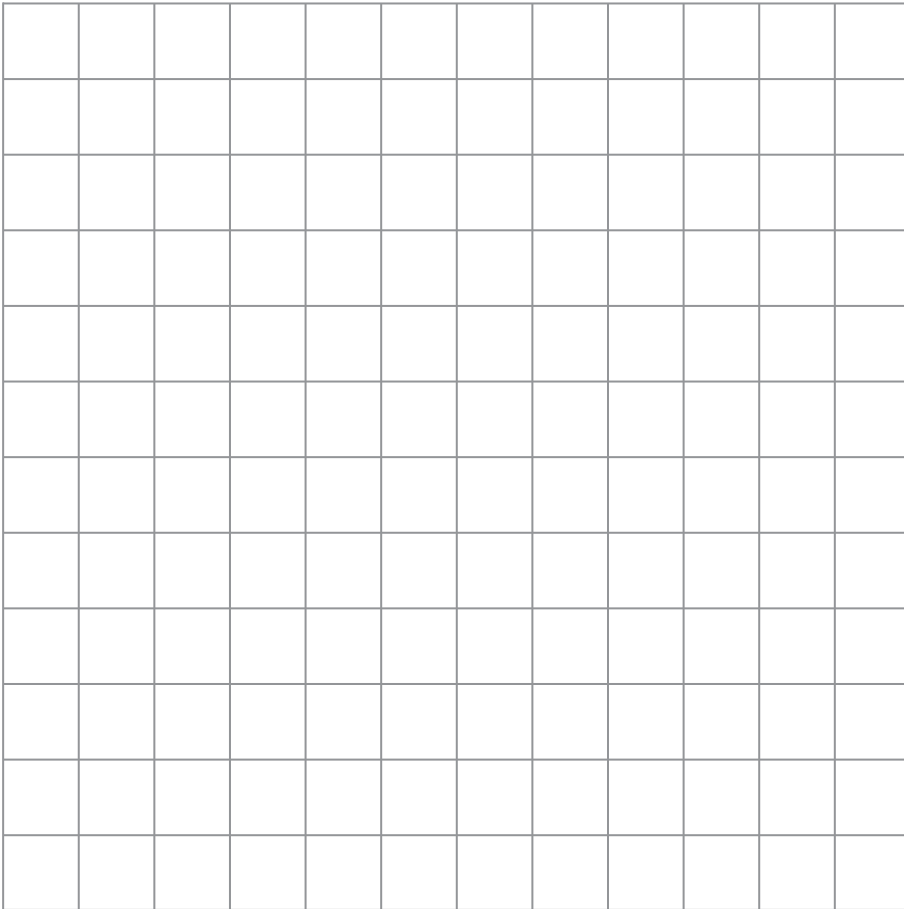


9 On this centimetre grid, draw **one** rectangle with

$$\text{Perimeter} = 20 \text{ cm}$$

$$\text{and Area} = 24 \text{ cm}^2$$

[2 marks]



Turn over ►



**10** Here are the temperatures in four places at 7:00 am one morning.

Aberdeen  $-15.8\text{ }^{\circ}\text{C}$

London  $-4.9\text{ }^{\circ}\text{C}$

Sheffield  $-7.6\text{ }^{\circ}\text{C}$

Warwick  $-5.3\text{ }^{\circ}\text{C}$

**10 (a)** Which place was the warmest?

**[1 mark]**

Answer .....

**10 (b)** What was the difference in temperature between Aberdeen and Warwick?

**[1 mark]**

Answer .....  $^{\circ}\text{C}$

**10 (c)** At 4:00 pm the temperature in Sheffield was  $1.7\text{ }^{\circ}\text{C}$  higher than at 7:00 am.

What was the temperature in Sheffield at 4:00 pm?

**[1 mark]**

Answer .....  $^{\circ}\text{C}$

**11** Work out  $\frac{3}{5}$  of 900

**[2 marks]**

.....

Answer .....



12 Use your calculator to work out

12 (a)  $\sqrt{576}$

[1 mark]

Answer .....

12 (b)  $2.3^2 + \sqrt{5}$

[1 mark]

Answer .....

12 (c)  $\frac{1}{0.4^2}$

[1 mark]

Answer .....

13 Megan took two tests.  
Here are her results.

Geography test  $\frac{13}{20}$

History test  $\frac{16}{25}$

In which test did Megan get the higher percentage mark?  
You **must** show your working.

[2 marks]

.....  
.....  
.....  
.....

Answer .....

10

Turn over ►



**\*14** The table shows the GCSE Mathematics results of the students in a school.

Grade	U	G	F	E	D	C	B	A	A*
Number of students	0	8	20	43	37	51	34	30	17

The school had a target that 60% of the students get grade C or higher.

Did the school meet its target?  
You **must** show your working.

**[5 marks]**

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Answer .....





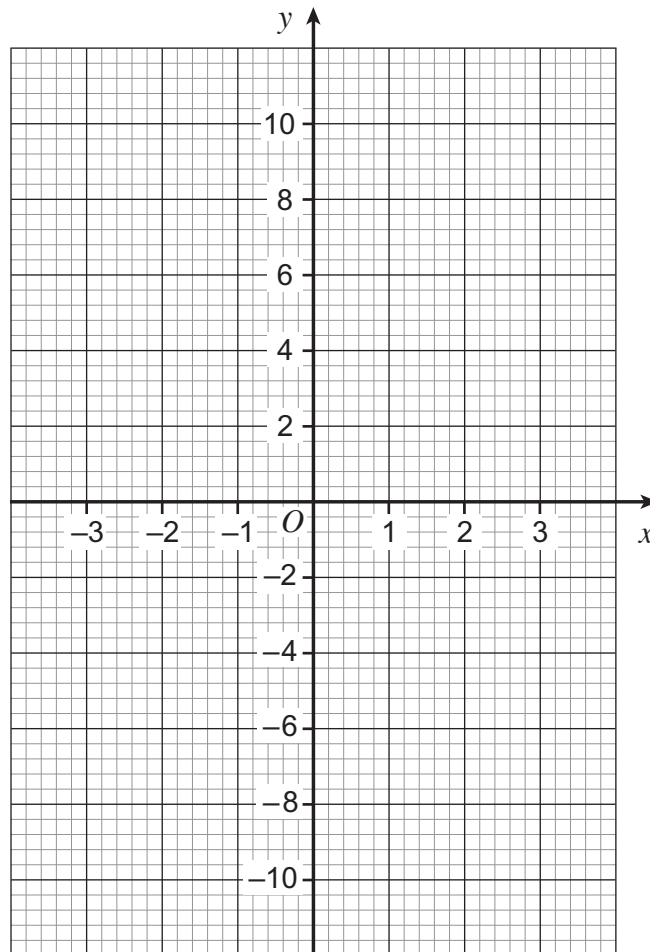
**15 (a)** Complete the table for  $y = 3x - 1$

**[2 marks]**

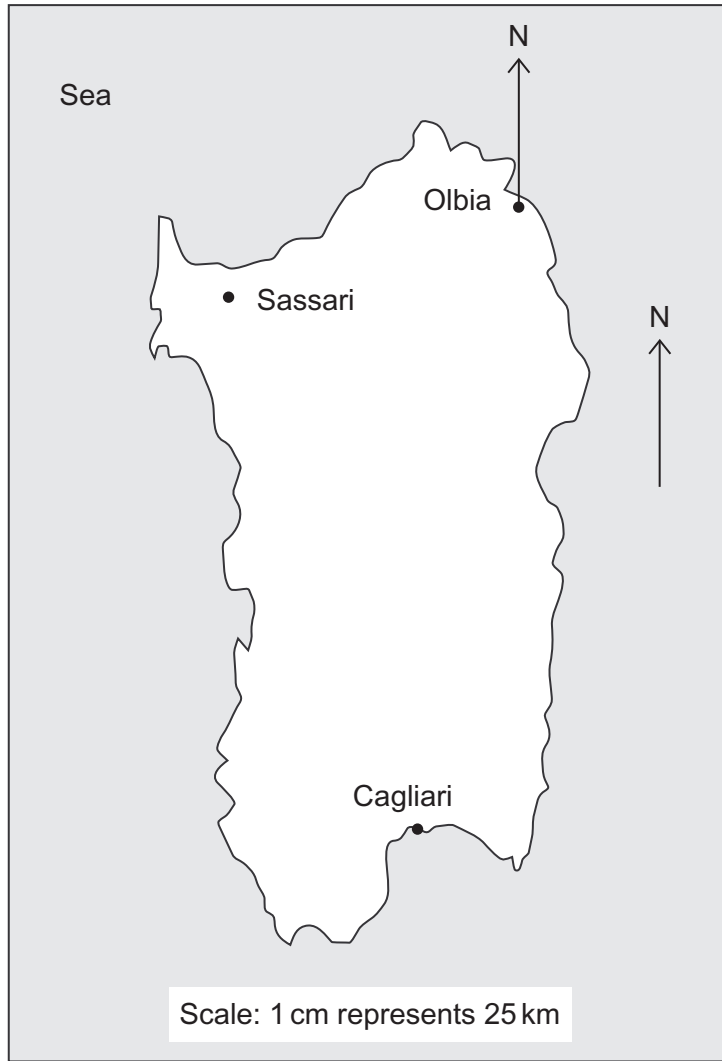
$x$	-3	-2	-1	0	1	2	3
$y$	-10		-4	-1	2		8

**15 (b)** On the grid draw the graph of  $y = 3x - 1$  for values of  $x$  from -3 to 3

**[2 marks]**



16 Here is a map of Sardinia.



16 (a) Work out the **actual** distance between Cagliari and Sassari.

[3 marks]

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.....

Answer ..... km



- 16 (b)** Mario's favourite beach is on a bearing of  $165^\circ$  from Olbia.  
Draw this bearing and mark with a cross the position of the beach.

**[2 marks]**

**Turn over for the next question**

5

**Turn over ►**



**17** 50 cars arrive at a car park.  
The table shows the number of people in each car.

Number of people	Number of cars
1	9
2	12
3	18
4	7
5	4

**17 (a)** One of the cars is chosen at random.

Work out the probability that there are **more than 3** people in the car.

**[2 marks]**

.....  
 .....

Answer .....

**17 (b)** Work out the total number of people in the 50 cars.

**[2 marks]**

.....  
 .....

Answer .....



**18 (a)** Simplify fully  $3a + 4b + a - 2b$

**[2 marks]**

.....

Answer .....

**18 (b)** Solve  $4x - 7 = 11$

**[2 marks]**

.....

.....

$x =$  .....

**Turn over for the next question**



**19** Here is a list of what you need to make 20 buns.

180 g	butter
150 g	flour
200 g	sugar
4	eggs

Work out what you need to make 30 buns.

**[3 marks]**

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..... g butter

..... g flour

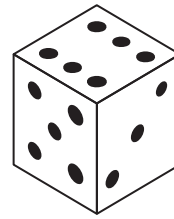
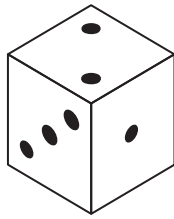
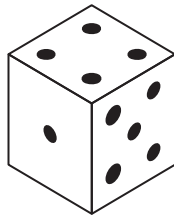
..... g sugar

..... eggs



**\*20**

Here are two games that can be played with ordinary six-sided fair dice.

**Game A**

Roll two dice

Add the numbers

The total is your score

**Game B**

Roll one dice

The number you get is your score

Which game gives a higher chance of scoring **6**?  
You **must** show your working.

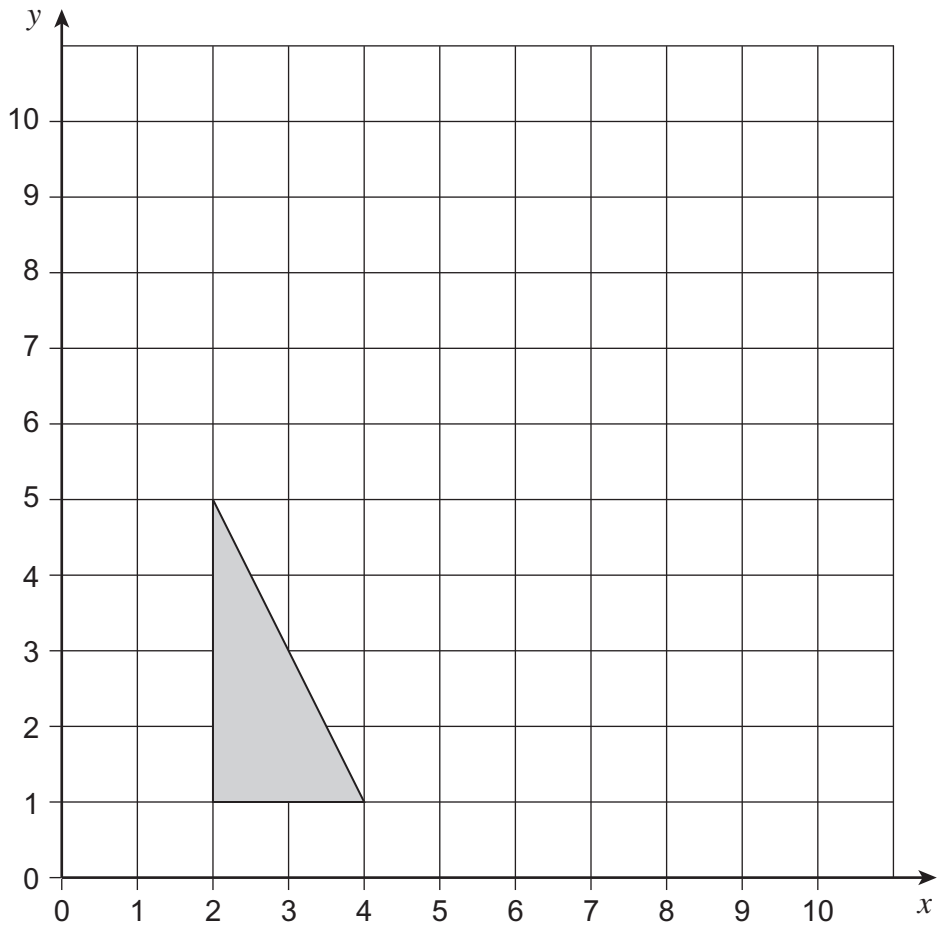
**[5 marks]**

Answer .....



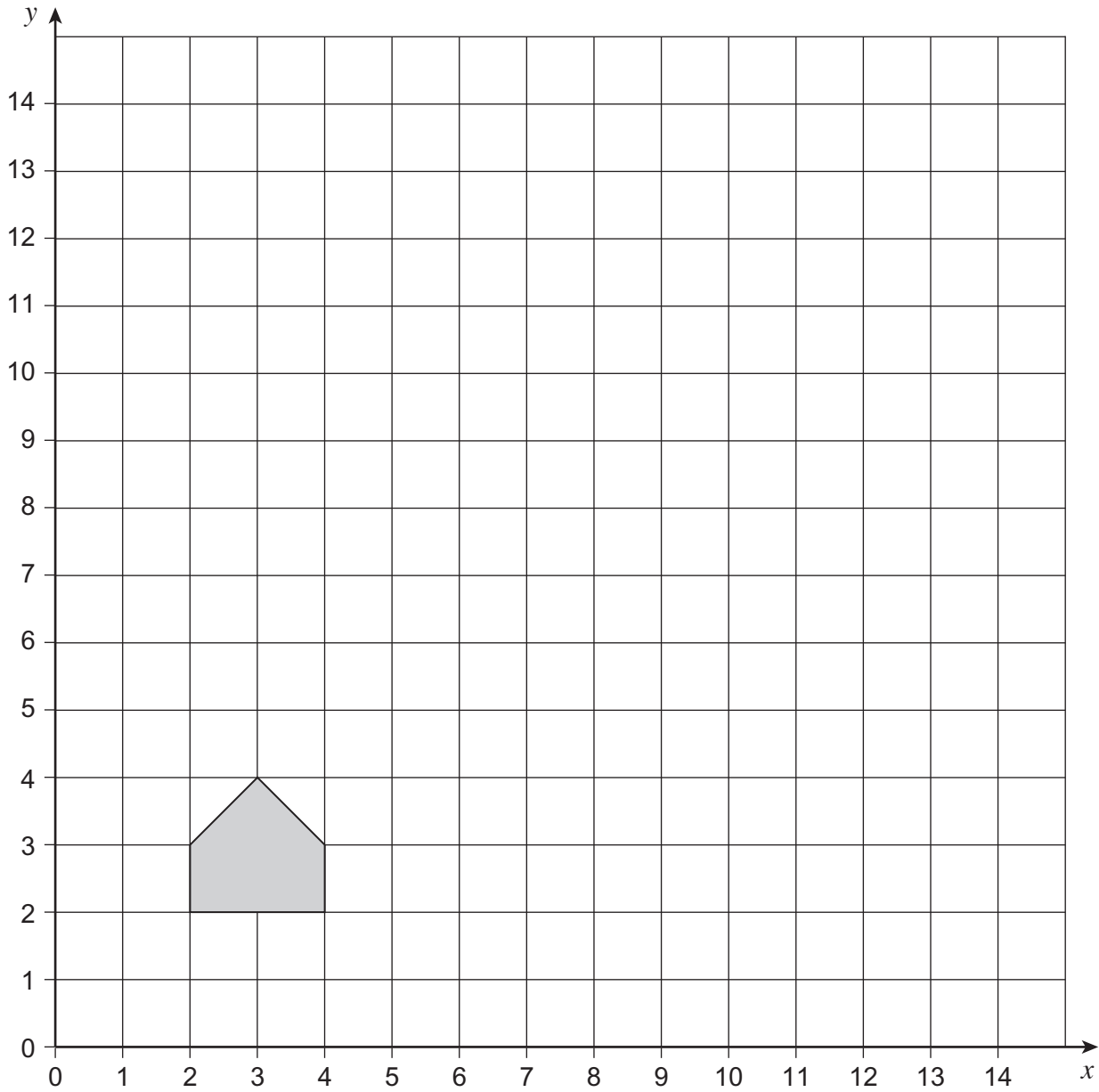
21 (a) Reflect the triangle in the line  $y = 5$

[2 marks]





21 (b) Enlarge the shape by scale factor 4, centre of enlargement (1, 1).



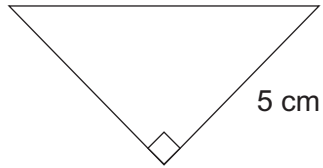
[3 marks]

Turn over ►

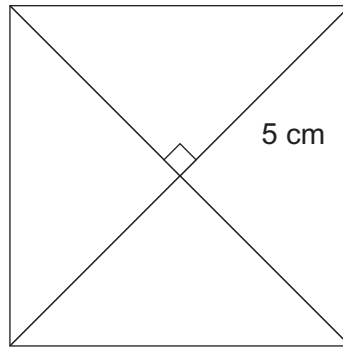


22

Here is a right-angled triangle.

Not drawn  
accurately

Four of these triangles are joined to make a square as shown.

Not drawn  
accurately

Work out the area of the square.

**[3 marks]**

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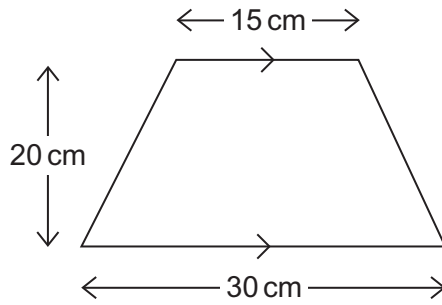
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Answer .....  $\text{cm}^2$ 

23 The diagram shows a trapezium.



Not drawn accurately

23 (a) Work out the area of the trapezium.

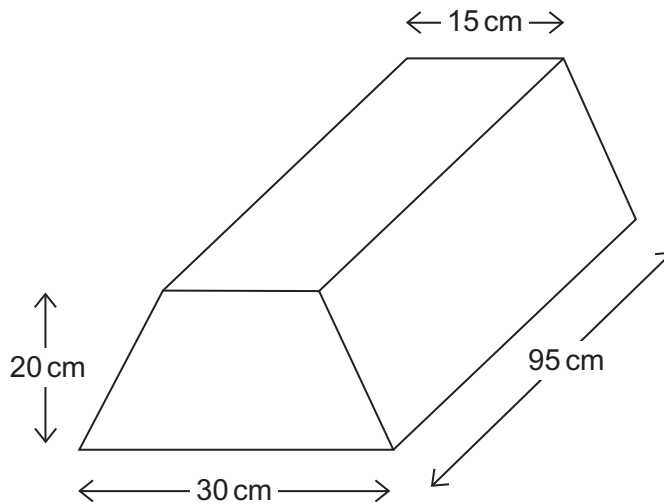
[2 marks]

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Answer ..... cm<sup>2</sup>

23 (b) The trapezium is the cross-section of this prism.



Work out the volume of the prism.

[2 marks]

.....

.....

Answer ..... cm<sup>3</sup>

7
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Turn over ►



**\*24** Jack sees the bicycle he wants to buy in two shops.


**Bye-cycles**



Price without VAT £130

VAT is 20%

**Just Bykes**



Normal price £195

Now  $\frac{1}{4}$  off

VAT is included

In which shop is the bicycle cheaper?  
You **must** show your working.

**[5 marks]**

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Answer .....



**25** These expressions represent four numbers.  
The value of the median of the expressions is 12.

$x$                        $2x$                        $6x$                        $11x$

Work out the value of the mean of the expressions.

**[5 marks]**

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Answer .....

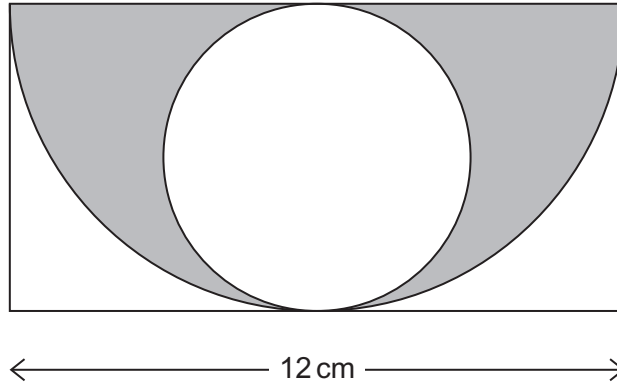
**Turn over for the next question**

10

**Turn over ►**



26 The diagram shows a rectangle, a semi-circle and a circle.



Not drawn  
accurately

Work out the area of the **circle**.

[4 marks]

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Answer ..... cm<sup>2</sup>

**END OF QUESTIONS**

4



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ANSWER IN THE SPACES PROVIDED**



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