



Surname \_\_\_\_\_

Other Names \_\_\_\_\_

Centre Number \_\_\_\_\_

Candidate Number \_\_\_\_\_

Candidate Signature \_\_\_\_\_

**GCSE**

**MATHEMATICS**

**F**

**Foundation Tier Paper 1 Non-Calculator**

**8300/1F**

**Tuesday 21 May 2019 Morning**

**Time allowed: 1 hour 30 minutes**

**For this paper you must have:**

- mathematical instruments

**You must NOT use a calculator.**



**At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.**

**[Turn over]**



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## **INSTRUCTIONS**

- **Use black ink or black ball-point pen. Draw diagrams in pencil.**
- **Answer ALL questions.**
- **You must answer the questions in the spaces provided. Do not write on blank pages.**
- **Do all rough work in this book. Cross through any work you do not want to be marked.**

## **INFORMATION**

- **The marks for questions are shown in brackets.**
- **The maximum mark for this paper is 80.**
- **You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.**

## **ADVICE**

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

**DO NOT TURN OVER UNTIL TOLD TO DO SO**



**Answer ALL questions in the spaces provided**

**1 Which type of angle is the largest?**

**Circle your answer. [1 mark]**

**right**

**reflex**

**obtuse**

**acute**

**2 Solve  $4x = 8$**

**Circle your answer. [1 mark]**

**$x = 0.5$**

**$x = 2$**

**$x = 4$**

**$x = 32$**

**3 Work out  $10 + (-4)$**

**Circle your answer. [1 mark]**

**-14**

**-6**

**6**

**14**



- 4 Circle the calculation which works out half of 12  
[1 mark]

$12 \div 0.5$

$2 \div 12$

$12 \times \frac{1}{2}$

$12 \div 50 \times 100$

[Turn over]





5 (b) Work out  $9.36 \times 2$

[1 mark]

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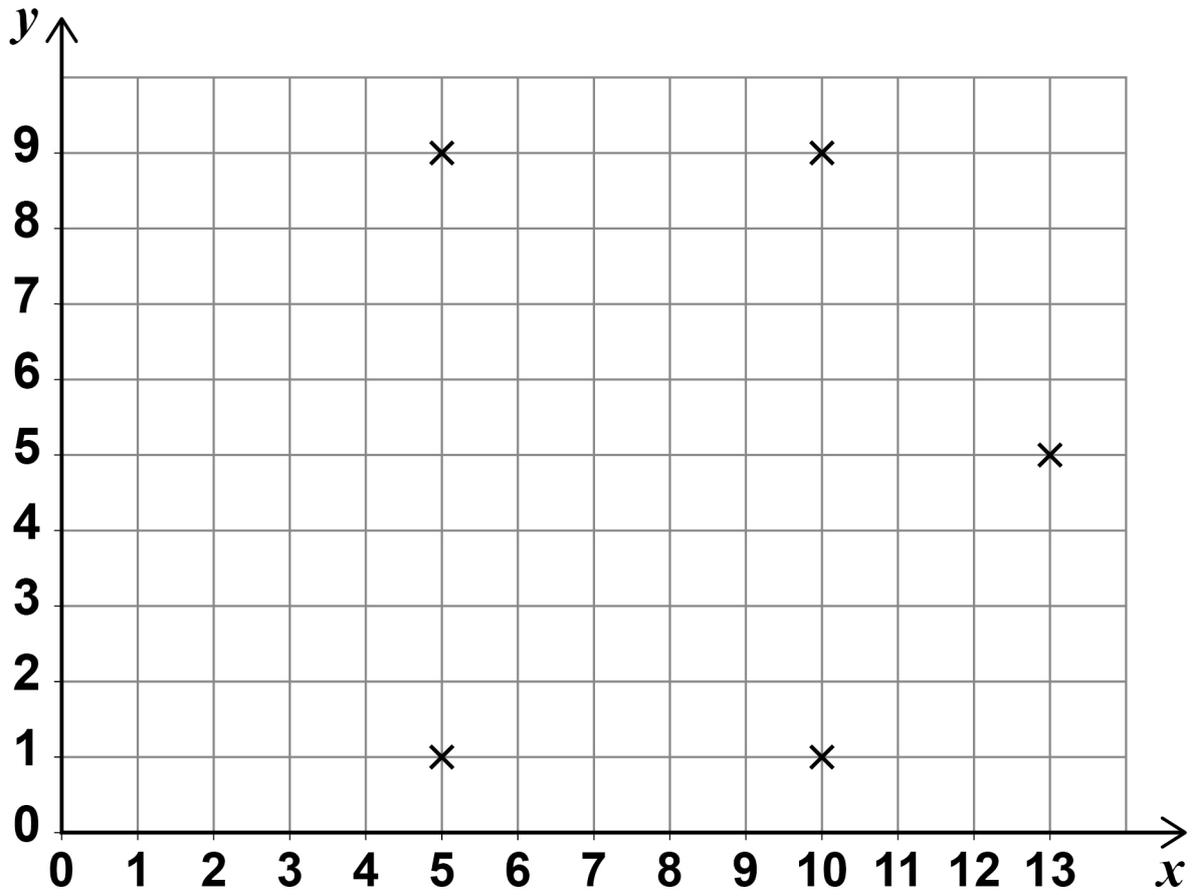
Answer \_\_\_\_\_

7

[Turn over]



6 Five points are plotted on a grid.



The points are five of the vertices of a hexagon.

Each side of the hexagon has the same length.

Work out ONE possible pair of coordinates of the other vertex. [2 marks]

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Answer ( \_\_\_\_\_ , \_\_\_\_\_ )

[Turn over]



7 Amy and Brad each have some money.

Carly has no money.

Amy gives £7 to Carly.

Brad gives £5 to Carly.

Now they all have the same amount of money.

How much money did Amy have to begin with?  
[2 marks]

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Answer £ \_\_\_\_\_

4



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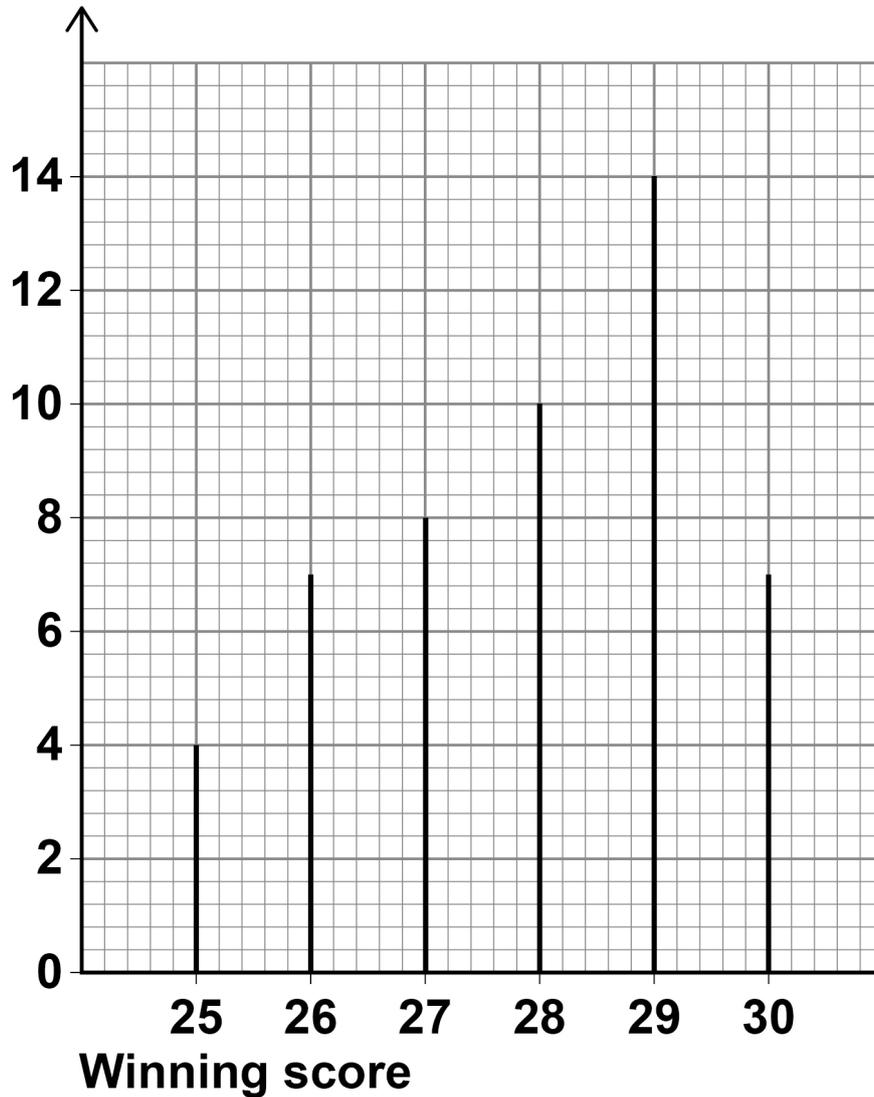
**[Turn over]**



8 A game is played 50 times.

The vertical line chart shows the winning scores.

Number  
of games



8 (a) Write down the mode. [1 mark]

Answer \_\_\_\_\_



The game is played again.

8 (b) Use the chart to estimate the probability that the winning score is 25

[1 mark]

Answer \_\_\_\_\_

8 (c) Use the chart to estimate the probability that the winning score is 27 or more. [2 marks]

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Answer \_\_\_\_\_

[Turn over]

9 (a) Write down ALL the factors of 18  
[2 marks]

Answer \_\_\_\_\_

9 (b) Work out the lowest common multiple (LCM) of  
12 and 15  
[2 marks]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

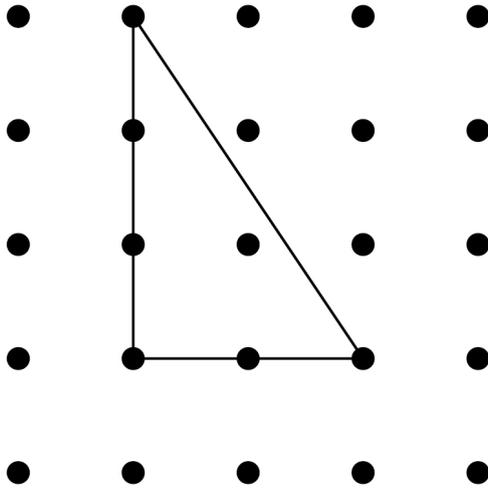
Answer \_\_\_\_\_

8

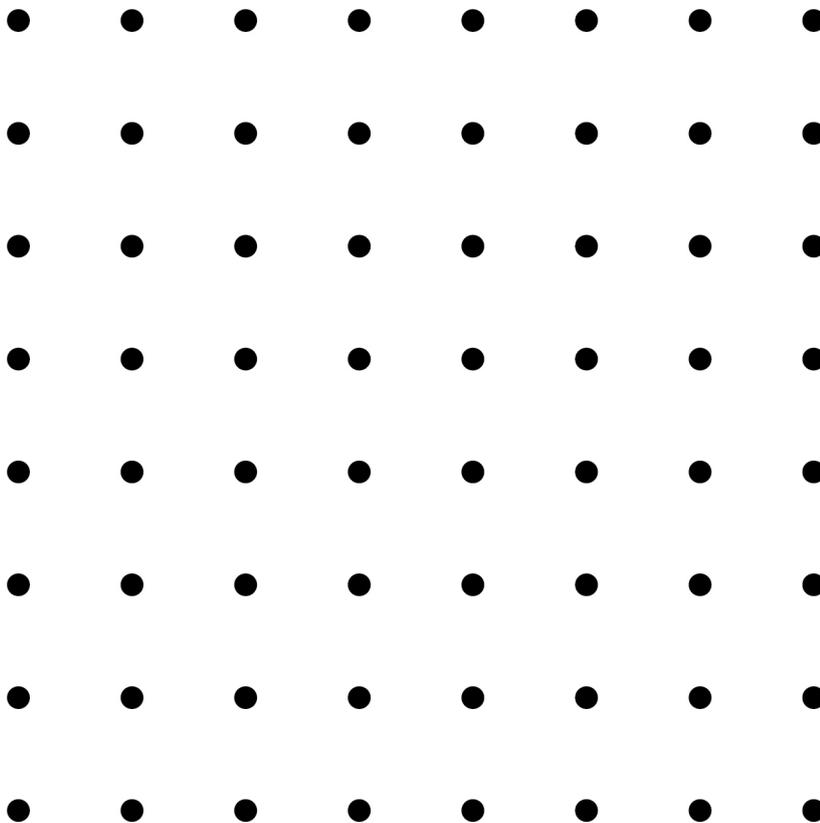




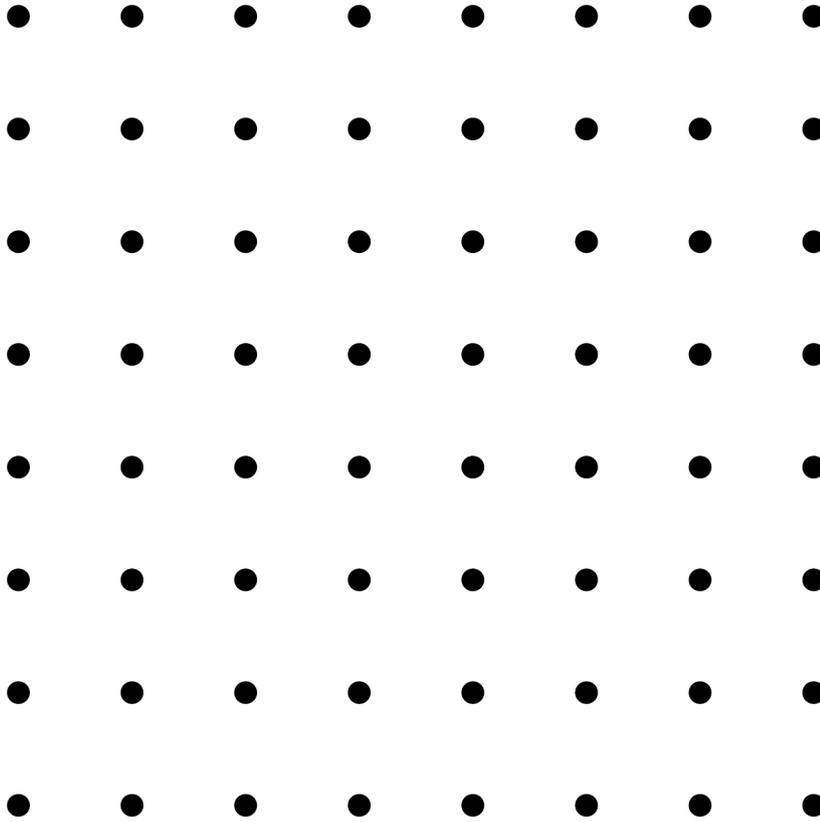
11 Here is a triangle on a square dotted grid.



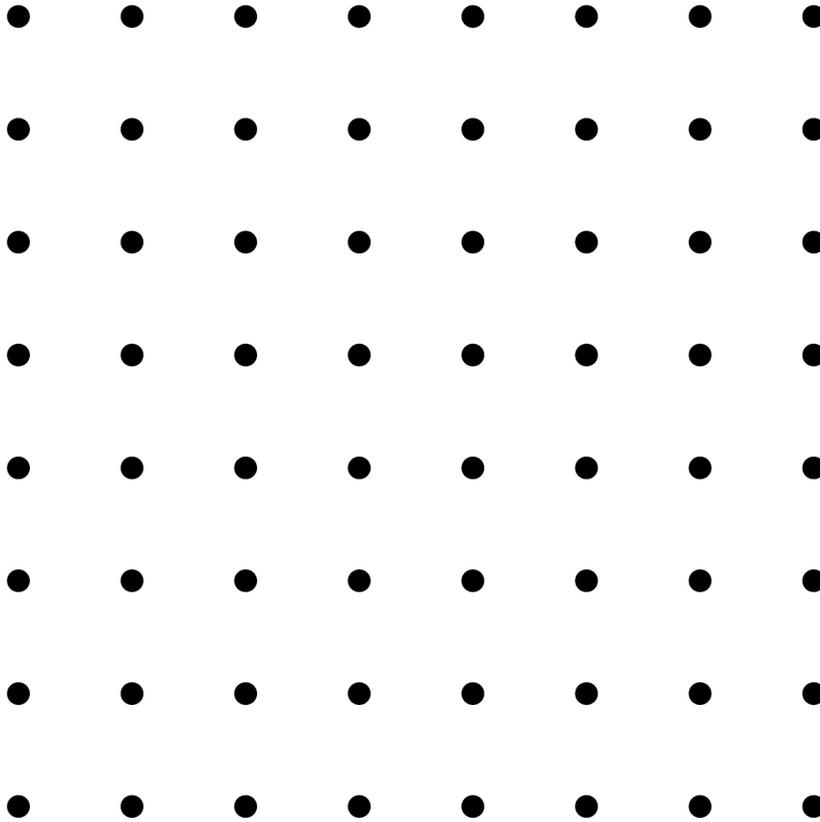
11 (a) On the grid below, show how you can make a parallelogram with TWO of these triangles.  
[1 mark]



- 11 (b) On the grid below, show how you can make a trapezium with **THREE** of these triangles.  
[1 mark]



- 11 (c) On the grid below, show how you can make a rhombus with FOUR of these triangles.  
[1 mark]



[Turn over]





13 In a game the average score was 50

Tom's score was  $\frac{5}{2}$  of the average.

Circle Tom's score. [1 mark]

125

175

30

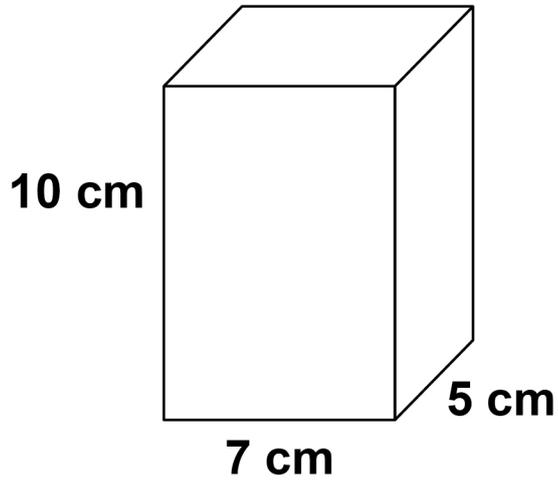
20

[Turn over]



14 Here is a cuboid.

It is not drawn accurately.



Work out the volume. [2 marks]

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Answer \_\_\_\_\_  $\text{cm}^3$

15 Circle the shape that has a uniform cross section. [1 mark]

cone

sphere

cylinder

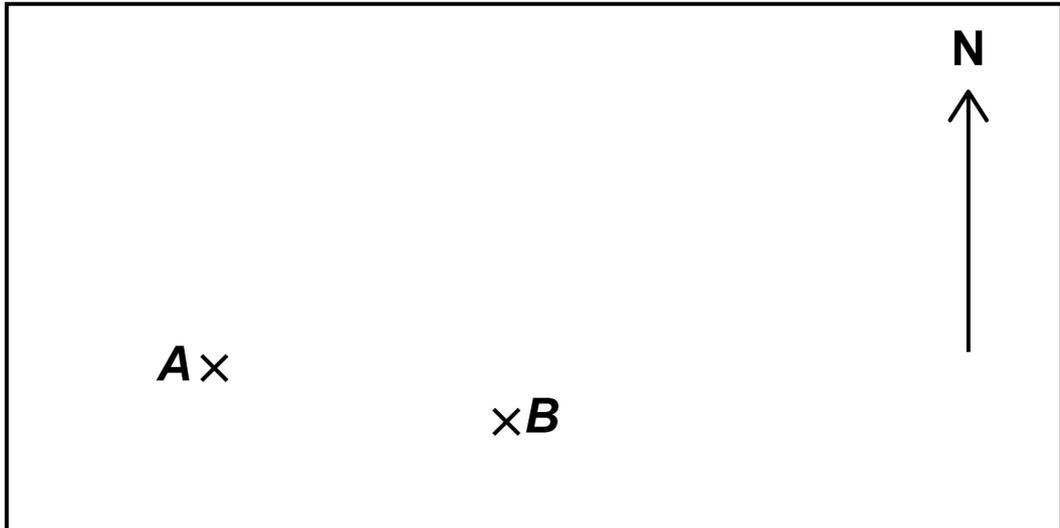
pyramid

7

[Turn over]

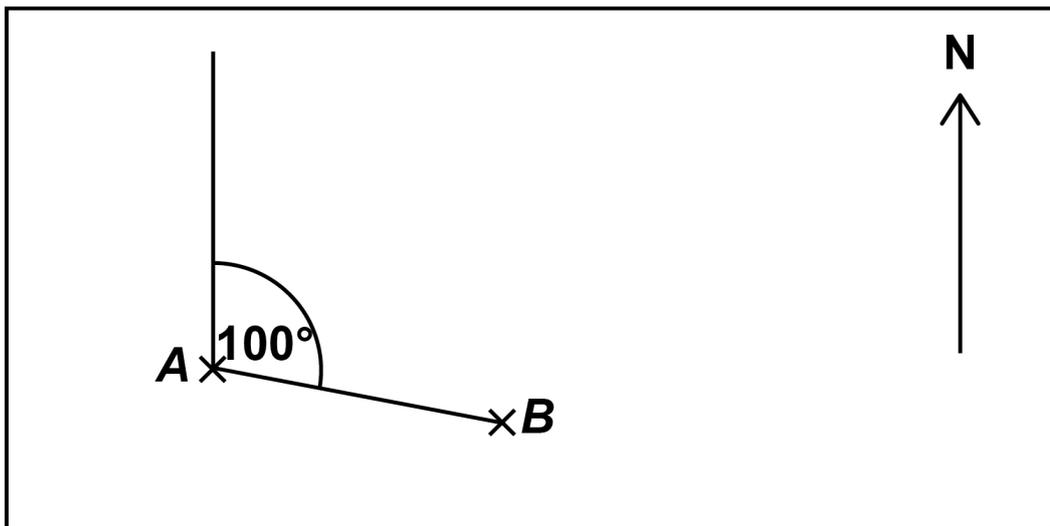


16 (a) Here is a map showing points *A* and *B*.



Kemal wants to measure the bearing of *A* FROM *B*.

He draws two lines and measures the angle between them.



**Kemal says that the bearing of  $A$  from  $B$  is  $100^\circ$**

**Is his method correct?**

**Give a reason for your answer. [1 mark]**

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**[Turn over]**

16 (b) On a different map, the bearing of  $D$  from  $C$  is  $045^\circ$

Nina says,

“ $D$  is North West of  $C$ .”

Is Nina correct?

Give a reason for your answer. [1 mark]

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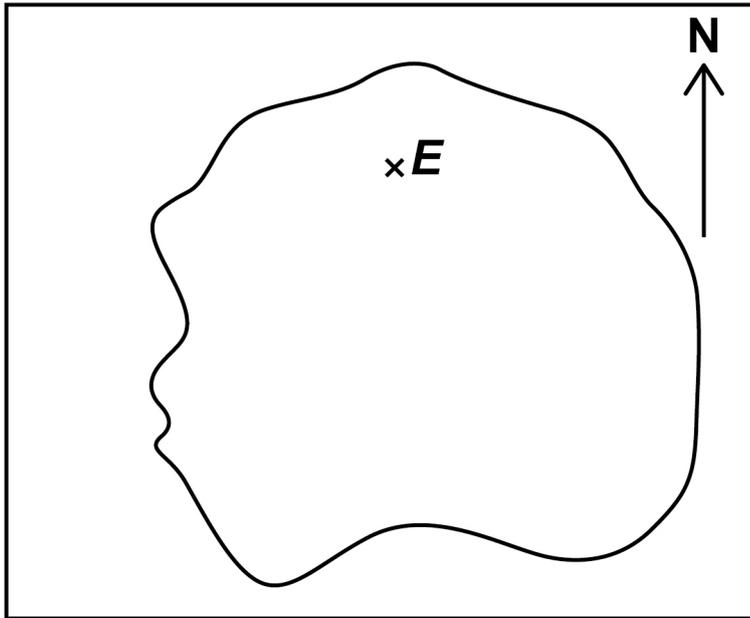
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16 (c) This map shows an airport, *E*, on an island.

Scale: 1 cm represents 100 km

Take this line to represent 1 cm —



A plane flies due South from the airport.

How far does it fly until it reaches the sea?  
[3 marks]

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Answer \_\_\_\_\_ km

5
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[Turn over]



17 (a) Simplify fully  $56 : 24$   
[2 marks]

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Answer \_\_\_\_\_ :

17 (b) Write the ratio  $5 : 4$  in the form  $n : 1$   
[1 mark]

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Answer \_\_\_\_\_ :





- 18 Here is some data about the people listening to a radio station one day.

	Percentage	Mean number of hours listening	Range of number of hours listening
Aged 40 or under	21	1.2	4.5
Aged 41 or over	79	6.3	13.9

Compare the data for people aged 40 or under with the data for people aged 41 or over.

Make THREE comparisons. [3 marks]

Comparison 1 \_\_\_\_\_

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**Comparison 2**

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**Comparison 3**

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8

**[Turn over]**



19 You are given that  $4a - 2b = 10$

19 (a) Write down the value of  $2a - b$

[1 mark]

Answer \_\_\_\_\_

19 (b) Write down the value of  $2b - 4a$

[1 mark]

Answer \_\_\_\_\_





20 (a) Write 0.000 97 in standard form. [1 mark]

Answer \_\_\_\_\_

20 (b) Work out  $\frac{3 \times 10^5}{4 \times 10^3}$

Give your answer as an ordinary number.  
[2 marks]

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Answer \_\_\_\_\_

7



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**[Turn over]**



**21 Anna plays a game with an ordinary, fair dice.**

**If she rolls 1 she wins.**

**If she rolls 2 or 3 she loses.**

**If she rolls 4, 5 or 6 she rolls again.**

**When she has to roll again,**

**if she rolls an odd number she wins**

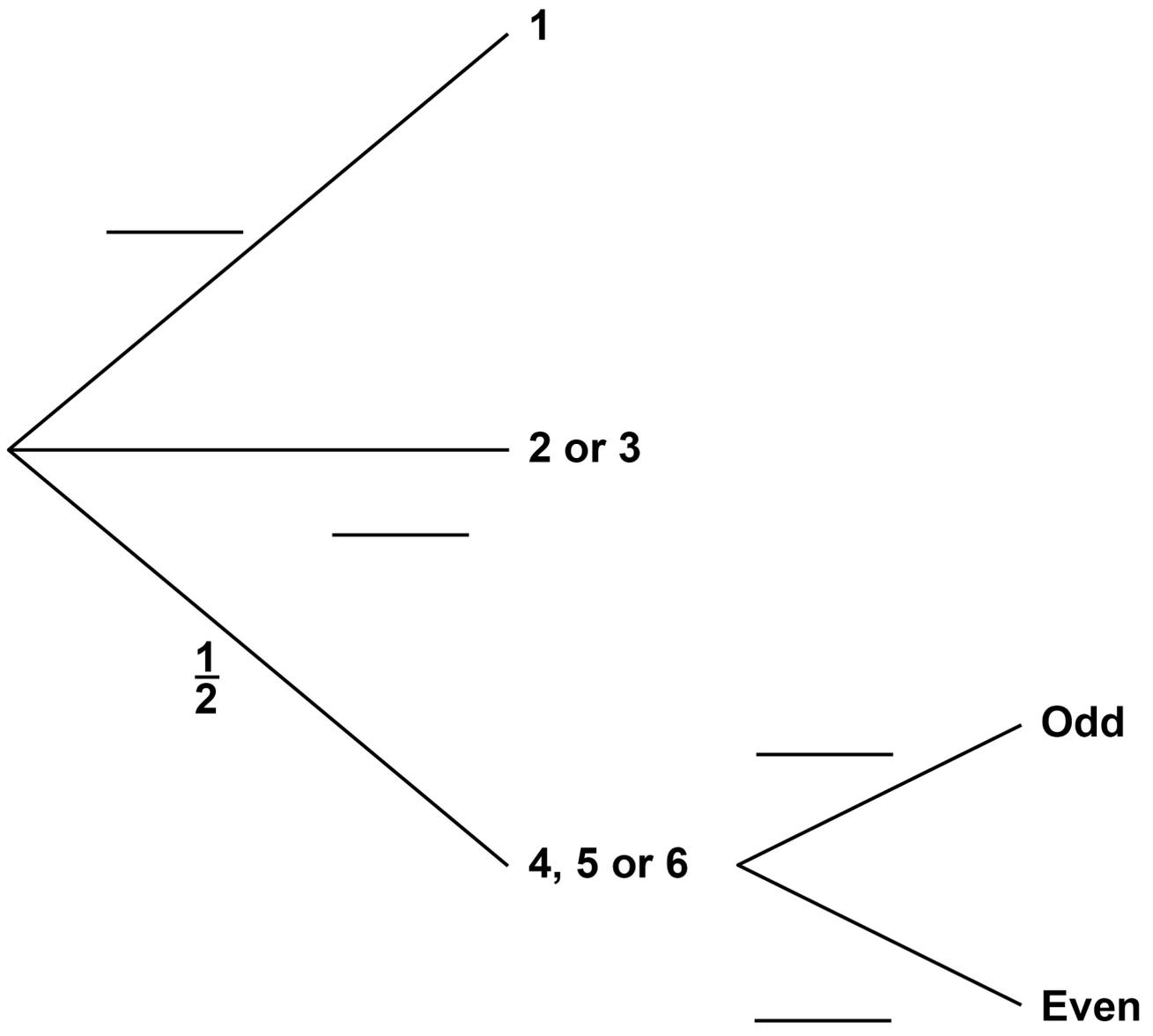
**if she rolls an even number she loses.**

**21 (a) Complete the tree diagram on the opposite page with the four missing probabilities.  
[2 marks]**

37

First roll

Second roll



[Turn over]



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- 23 Work out the value of  $(3^{12} \div 3^5) \div (3^2 \times 3)$   
[3 marks]

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**Answer** \_\_\_\_\_

[Turn over]



**24 (a)  $a + b = 0$**

**Which of these is equal to  $b$ ?****Circle your answer. [1 mark]**

$$0 \qquad \frac{1}{a} \qquad a \qquad -a$$

**24 (b)  $c \times d = 1$**

**Which of these is equal to  $d$ ?****Circle your answer. [1 mark]**

$$1 \qquad \frac{1}{c} \qquad c \qquad -c$$

7

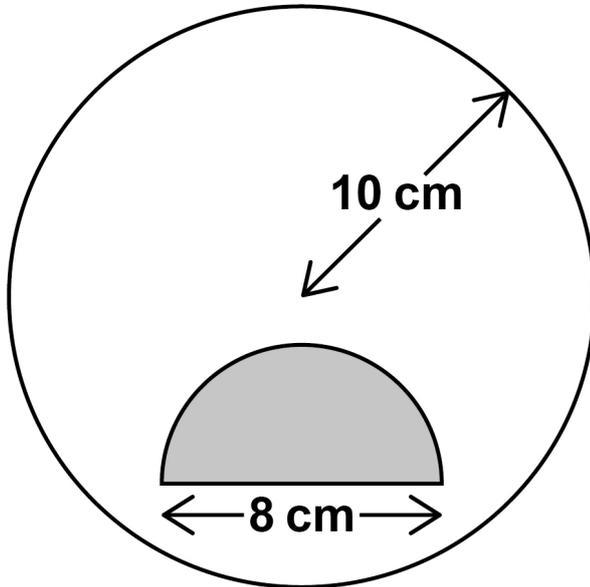


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**[Turn over]**



- 25 A shaded semicircle is inside a circle as shown. It is not drawn accurately.



The RADIUS of the circle is 10 cm

The DIAMETER of the semicircle is 8 cm

How many times bigger is the unshaded area than the shaded area? [4 marks]

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**Answer** \_\_\_\_\_

**[Turn over]**

- 26 The number of items,  $n$ , made in 1 hour by a machine is given by

$$n = \frac{60}{t}$$

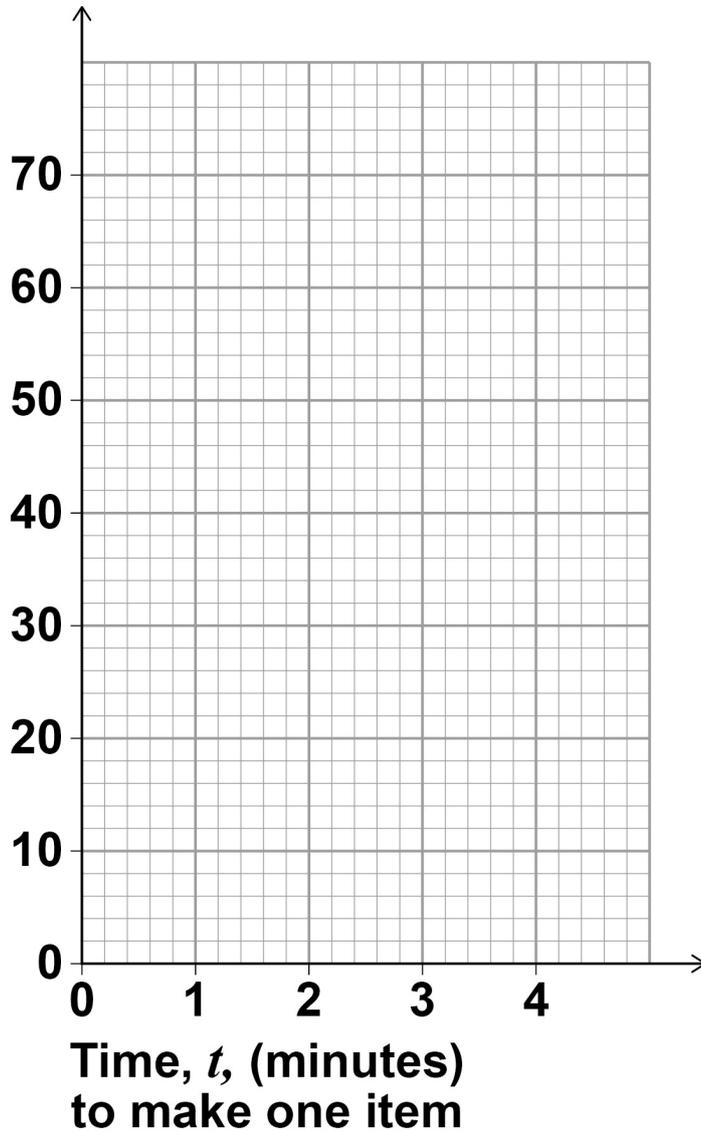
$t$  is the time in minutes the machine takes to make one item.

The value of  $t$  changes for different types of item.

- 26 (a) On the grid opposite, draw the graph of  $n = \frac{60}{t}$  for values of  $t$  from 1 to 4  
[2 marks]



Number of items,  $n$ ,  
made in 1 hour



- 26 (b) The machine takes 3 minutes 30 seconds to make one item.

**USE YOUR GRAPH** to estimate the value of  $n$ .  
[2 marks]

Answer \_\_\_\_\_



[Turn over]

- 27 Rearrange  $x = 2y - 6$  to make  $y$  the subject.  
[2 marks]

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**Answer** \_\_\_\_\_



28 Multiply out and simplify  $(x + 5)(x - 1)$   
[2 marks]

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Answer \_\_\_\_\_

4

END OF QUESTIONS



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For Examiner's Use	
Pages	Mark
4–7	
8–10	
12–14	
15–16	
17–19	
20–23	
24–27	
28–31	
32–34	
36–38	
39–42	
44–47	
48–49	
<b>TOTAL</b>	

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