



Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

GCSE MATHEMATICS

F

Foundation Tier Paper 2 Calculator

8300/2F

Monday 6 November 2017

Morning

Time allowed: 1 hour 30 minutes

For this paper you must have:

- a calculator
- mathematical instruments.



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 How many minutes are there in $2\frac{1}{4}$ hours?

Circle your answer. [1 mark]

135

145

215

225

- 2 Which of these numbers is HALF of a square number?

Circle your answer. [1 mark]

1

2

3

4

- 3 Circle the value of the digit 3 in the number 17.03
[1 mark]

$\frac{3}{10}$

$\frac{1}{30}$

$\frac{3}{100}$

$\frac{1}{300}$



4 The value of A is double the value of B .

Circle the correct formula. [1 mark]

$$A = B + 2 \quad A = 2B \quad A = \frac{B}{2} \quad A = B^2$$

5 (a) Simplify $y \times y$ [1 mark]

Answer _____

5 (b) Simplify $5a + 2 - a + 9$ [2 marks]

Answer _____

7

[Turn over]

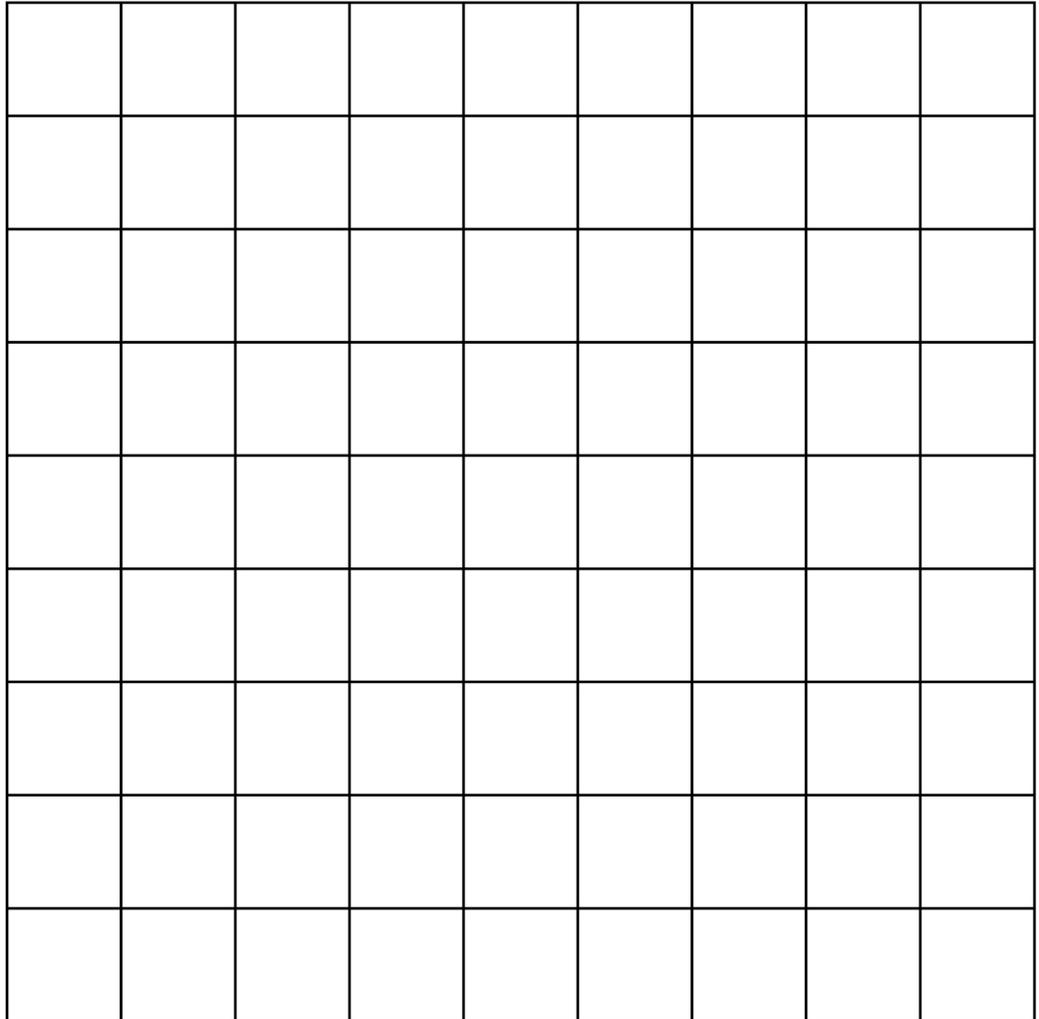


- 6 The table shows information about the birds in a garden.

Bird	Number
Robin	2
Sparrow	5
Wren	3
Lark	1



**Draw a bar chart to show the information.
[3 marks]**



[Turn over]



7 Eve has these coins.



Ola has these coins.



Eve gives **THREE** of her coins to Ola.

Now, Ola has the same amount of money as Eve.

Which coins does Eve give to Ola? [3 marks]



8 A dry cleaning shop has the following offers.

Suit

Normal price £12.50
1st suit normal price
2nd suit half price

Dress

Normal price £9.75
Three for the price of two

Work out the TOTAL price for 2 suits and 6 dresses. [4 marks]



Answer £ _____

[Turn over]



10 One of the angles in a triangle is 60°

Tick a box for each statement. [4 marks]

	Must be true	Cannot be true	Might be true
The triangle is equilateral			
The triangle has at least one other acute angle			
The triangle is right-angled			
The other two angles are each less than 60°			

[Turn over]



- 11 Which of these numbers has EXACTLY two factors?

Circle your answer. [1 mark]

6

7

8

9

- 12 Work out $\sqrt{7.5^2 + 18^2}$

Circle your answer. [1 mark]

19.5

25.5

331.5

380.25



14 Chris sells lawnmowers.

The table shows the number he sold each quarter for three years.

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2016	17	64	50	5
2015	9	72	61	1
2014	19	58	53	2

14 (a) In which year did he sell the most lawnmowers?

You MUST show your working. [2 marks]

Answer _____



14 (b) He uses the table to decide the number of lawnmowers to stock each quarter.

At the **START** of which quarter should Chris stock the most lawnmowers?

Circle your answer. [1 mark]

Quarter 1

Quarter 2

Quarter 3

Quarter 4

[Turn over]



15 In a test,
Section A has 80 marks
Section B has 120 marks.

Riya scores
55% in Section A
70% in Section B.

To pass, Riya needs to score 65% of the **TOTAL** marks.

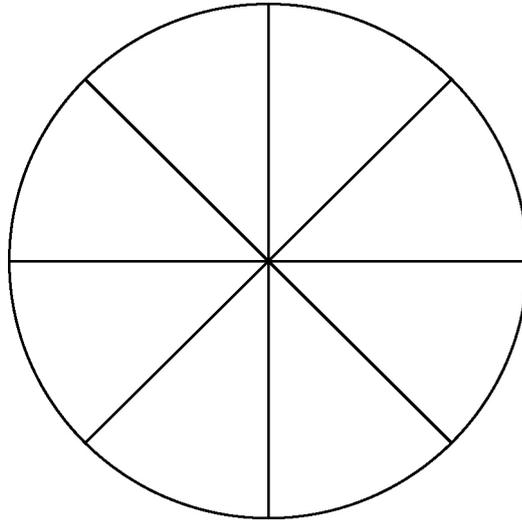
Does she pass?

You **MUST** show your working. [4 marks]



16 A wheel is made of a circular rim and 8 spokes as shown.

It is not drawn accurately.



The length of each spoke is 37 cm

Work out the TOTAL length of the rim and spokes.
[3 marks]

Answer _____ cm

[Turn over]



- 17 Here is a formula to convert degrees Celsius ($^{\circ}\text{C}$) to degrees Fahrenheit ($^{\circ}\text{F}$).

$$F = 1.8C + 32$$

F is the number of degrees Fahrenheit

C is the number of degrees Celsius

- 17 (a) Show that $-40^{\circ}\text{C} = -40^{\circ}\text{F}$ [2 marks]



17 (b) The temperature is -15°C

Nick says,

“Because the temperature is negative in Celsius, it **MUST** be negative in Fahrenheit.”

Is he correct?

You **MUST** show your working. [1 mark]

Answer _____

6

[Turn over]



18 Here are five cards.



One of the cards is removed.

The mean of the numbers on the remaining four cards is 6

Which card was removed?

You **MUST** show your working. [3 marks]

Answer _____

[Turn over]



19 (a) Divide 120 in the ratio 1 : 4 [2 marks]

Answer _____ :



19 (b) Write the ratio 7 : 4 in the form $n : 1$ [1 mark]

Answer _____ : _____

6

[Turn over]



Answer £ _____

[Turn over]



21 An experiment is carried out 200 times.

The possible outcomes are K, L and M.

21 (a) Complete the table. [2 marks]

Outcome	K	L	M
Frequency	84	54	
Relative frequency	0.42		



21 (b) Altogether, the experiment is carried out 500 times.

How many times would you expect the outcome to be K? [2 marks]

Answer _____

9

[Turn over]



- 22 The table shows information about the UK and Germany.

	Population	Area (square miles)
UK	64 000 000	95 000
Germany	82 000 000	140 000

$$\text{Population density} = \frac{\text{population}}{\text{area}}$$

Compare the population densities of the UK and Germany. [3 marks]



23 Which ONE of the following is discrete data?

Circle your answer. [1 mark]

Mass of a television

Time taken to deliver a television

Height of a television mast

Number of televisions sold

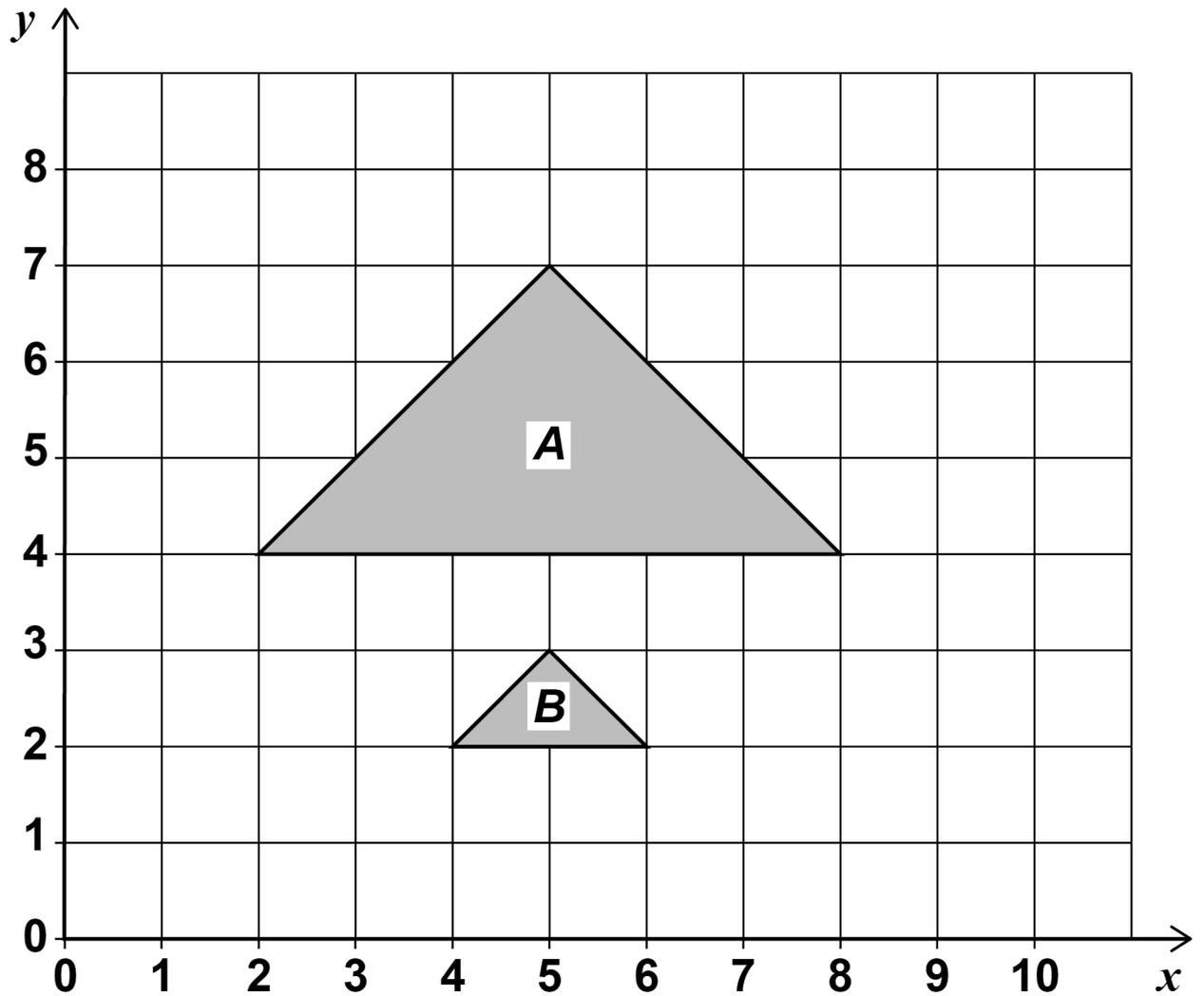
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- 24 Describe fully the SINGLE transformation that maps triangle *A* to triangle *B*. [3 marks]

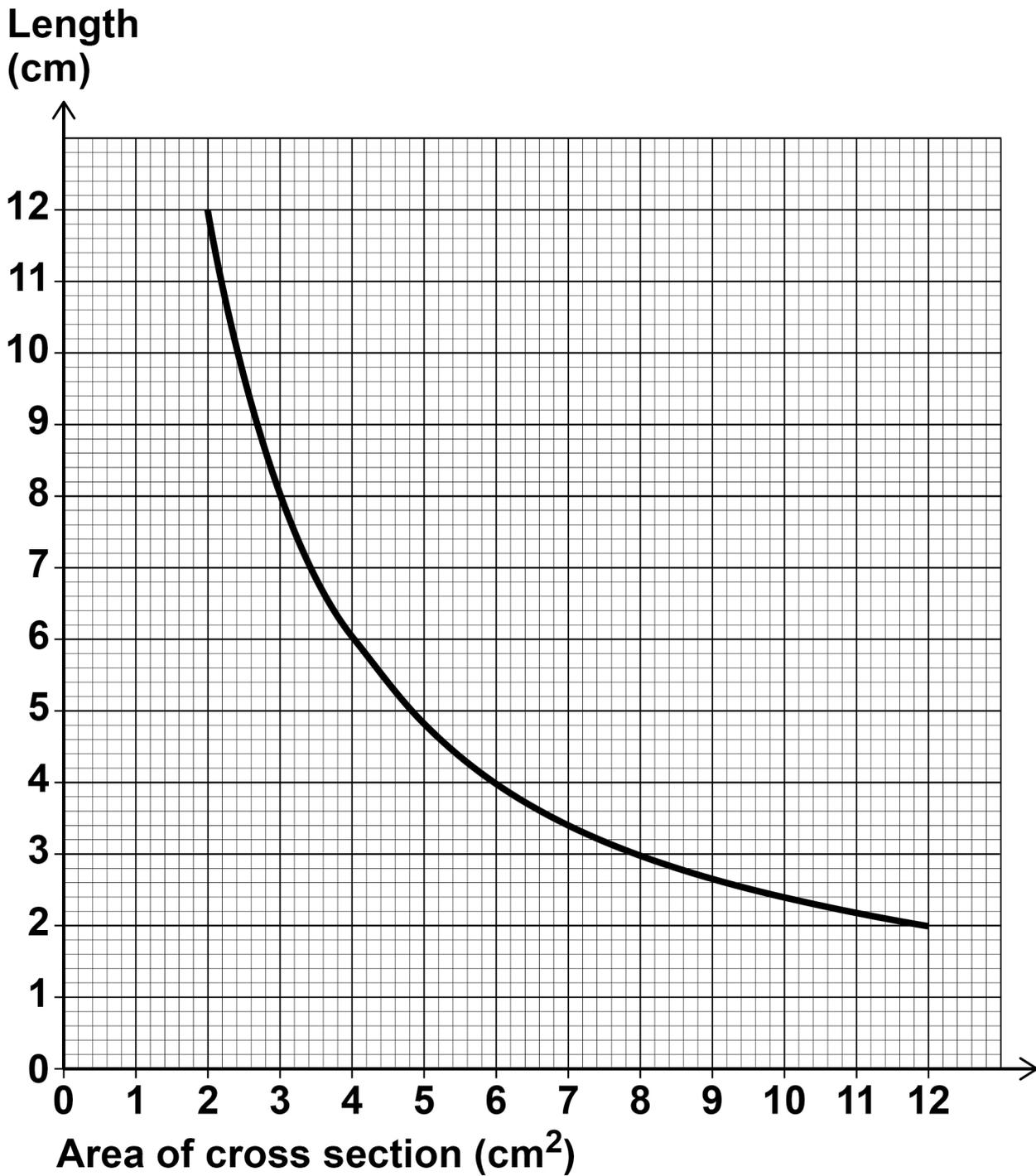


7

[Turn over]



- 25 The graph shows information about prisms with the same volume.



25 (a) Give ONE example to show the volume is 24 cm^3
[1 mark]

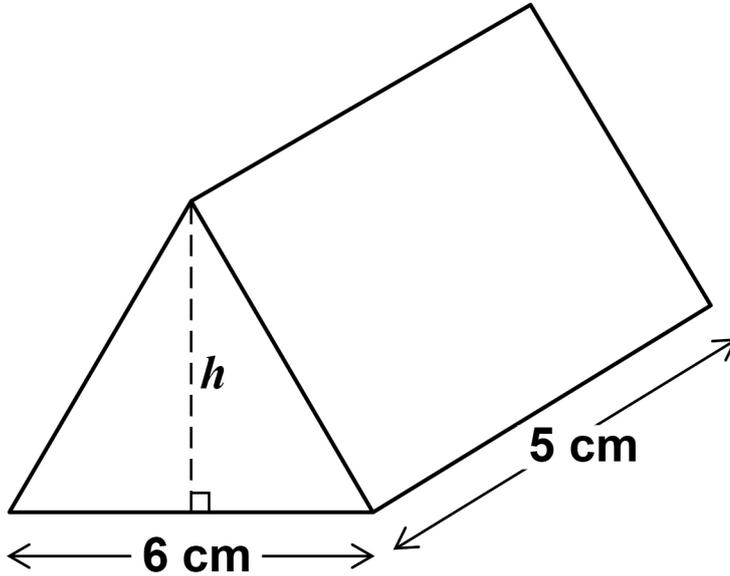
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- 25 (b) The diagram shows a prism with volume 24 cm^3
The height of the triangular cross section is h .



Work out the height, h . [3 marks]

Answer _____ cm

4

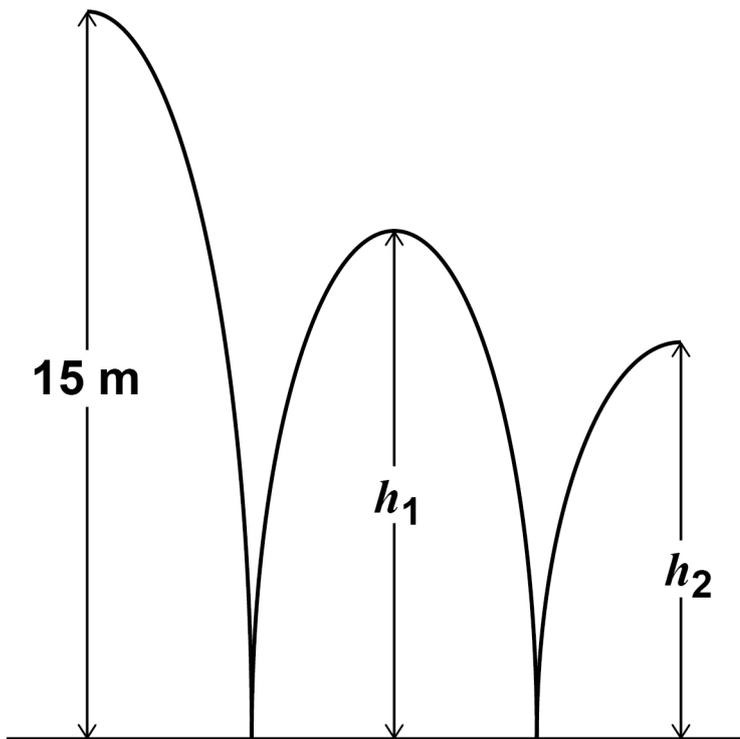
[Turn over]



26 A ball is thrown from a height of 15 metres.

It bounces to height h_1 , then to height h_2 as shown.

The diagram is not drawn accurately.



h_1 is three quarters of the original height.



26 (a) Jack expects h_2 to be three quarters of h_1

Work out the value of h_2 that he expects.

[2 marks]

Answer _____ metres

[Turn over]



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26 (b) In fact, h_2 is two thirds of h_1

How does this affect the answer to part (a)?

Tick a box.

The ball bounced higher than he expected

The ball bounced lower than he expected

Show working to support your answer.
[2 marks]

4

[Turn over]



27 Solve $4(3x - 2) = 2x - 5$ [3 marks]

$x =$ _____



- 28 Work out the next term of this quadratic sequence.
[2 marks]

5 8 14 23 _____

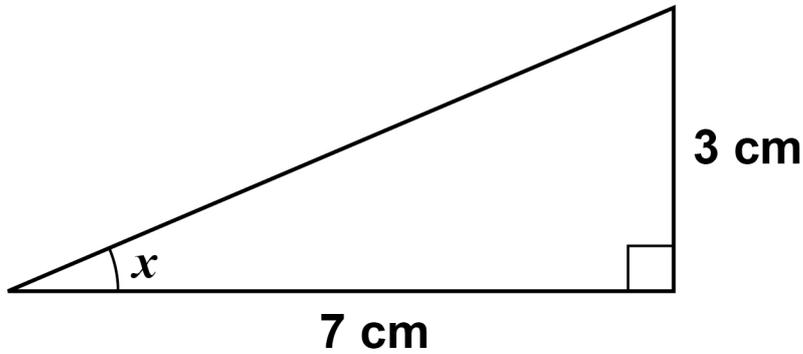
Answer _____

[Turn over]



29 Work out the size of angle x .

The diagram is not drawn accurately. [2 marks]



Answer _____ degrees

7

END OF QUESTIONS



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For Examiner's Use	
Pages	Mark
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TOTAL	

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