OXFORD

INTERNATIONAL AQA EXAMINATIONS

Please write clearly in block capitals.

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Surname _____

Forename(s) _____

Candidate signature _____

INTERNATIONAL GCSE

MATHEMATICS CORE

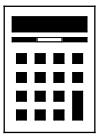
C

Paper 2C

Thursday 30 May 2019 07:00 GMT Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
- a calculator
- mathematical instruments.



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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- 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.
- If your calculator does not have a π button, take the value of π to be 3.142

Advice
- Show all necessary working; otherwise marks for method may be lost.

For Examiner's Use	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
20–21	
22–23	
TOTAL	

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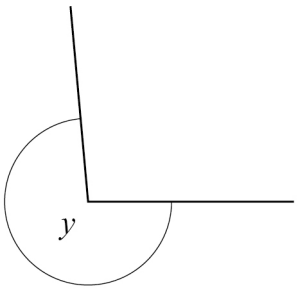
Answer **all** questions in the spaces provided.

1 The diagram shows angle y.



What type of angle is y?

Circle your answer.

[1 mark]

right obtuse reflex acute

2 Simplify $9a - 3 - 2a$

Circle your answer.

[1 mark]

$11a - 3$ $7a - 3$ $4a$ 4

3 Circle the number that is a factor of **both** 12 and 60

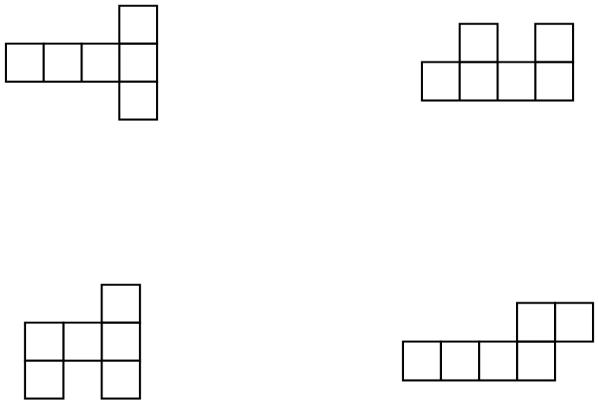
[1 mark]

5 12 60 720

Do not write outside the box

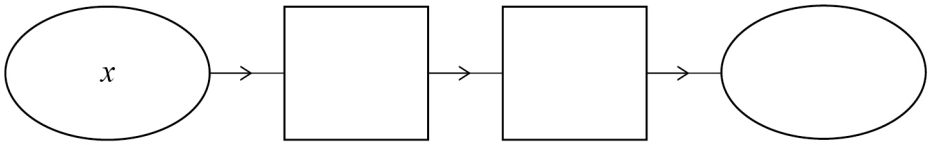
4 Circle the net of a cube.

[1 mark]



5 Complete the number machine so that $y = 2x + 1$

[2 marks]



Turn over for the next question

6

Do not write outside the box

6 0.5 kg of carrots cost 54 cents.

Ajay buys 7 kg of carrots.

He pays with a $10 note.

How much change should he get?

[4 marks]

Answer _____

7 Ali and Bob are playing a game.

They each choose three cards and work out the total of their three numbers.

The player with the higher total wins.

Ali			**Bob**		
5	1	–8	–4	7	–6

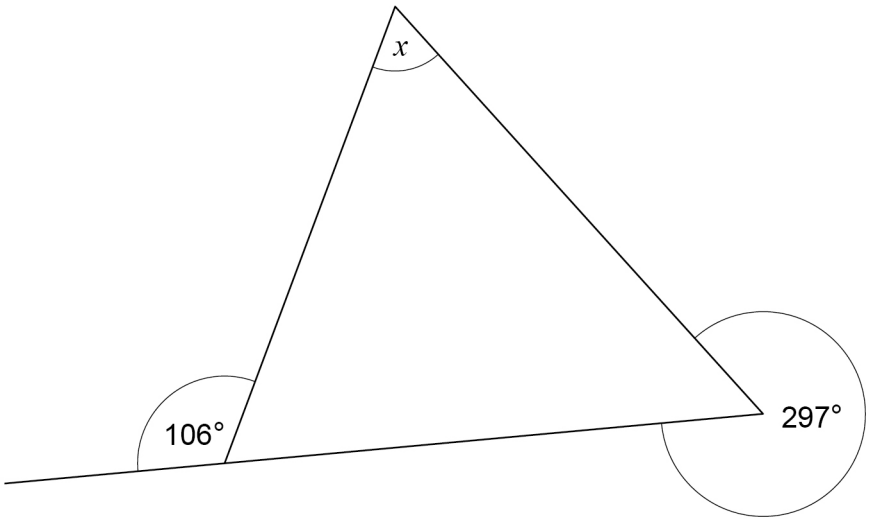
Who wins the game?

You **must** show your working.

[2 marks]

Do not write outside the box

8 Three straight lines make a triangle as shown.



Not drawn accurately

Work out the size of angle x.

[3 marks]

Answer _____ °

Turn over for the next question

9

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9 One night, a concert takes place at a theatre.

The theatre has 25 rows of seats.

Each row has 18 seats.

The theatre sells tickets for $14.75 each.

One fifth of the tickets are **not** sold.

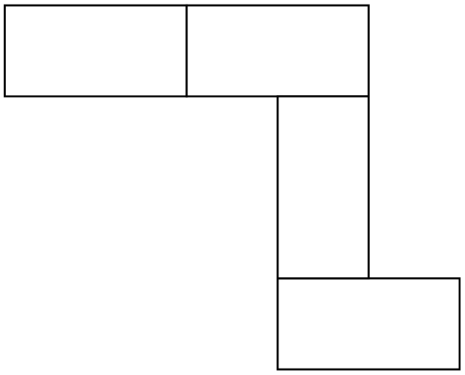
How much money does the theatre get from selling tickets?

[4 marks]

Answer $ _____

Do not write outside the box

10 (a) This pattern is made using four identical rectangles.



Add one more of these rectangles to make the pattern have rotational symmetry.

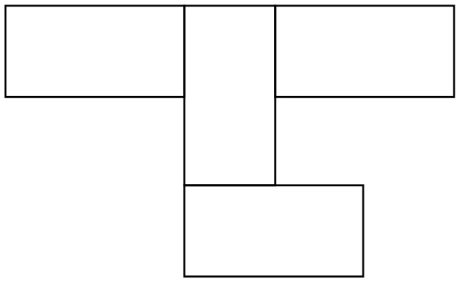
[1 mark]

10 (b) This pattern is also made using four identical rectangles.

Each rectangle has

length 17 cm

length double the width.



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Work out the area of the pattern.

[3 marks]

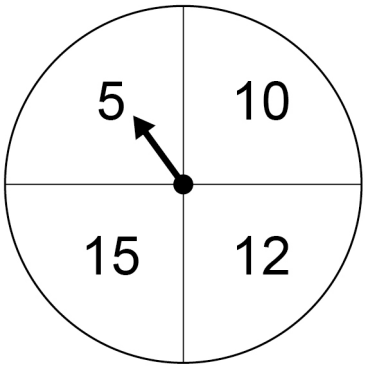
Answer _____ cm^2

8

Turn over ►

Do not write outside the box

11 Here is a fair spinner.



The spinner is spun twice.

The two numbers are multiplied together to get a score.

11 (a) Complete the table to show the possible scores.

[2 marks]

First spin

Second spin	**5**	**10**	**12**	**15**
5		50		75
10	50		120	
12		120		
15	75			225

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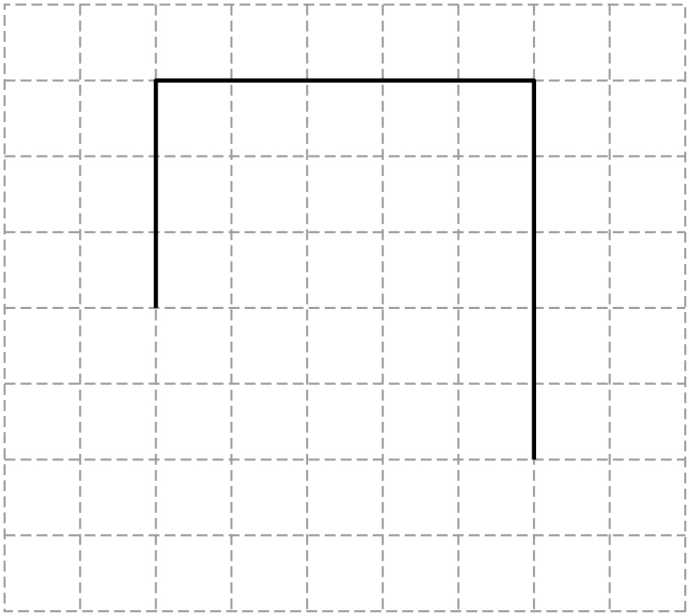
11 (b) Work out the probability that the score is a multiple of 5

[2 marks]

Answer _____

12 Each square in the grid has an area of 1 square centimetre.



Draw **two** more lines on the grid to make a pentagon that has

3 right angles

an area of 23 square centimetres.

[2 marks]

6

Turn over ►

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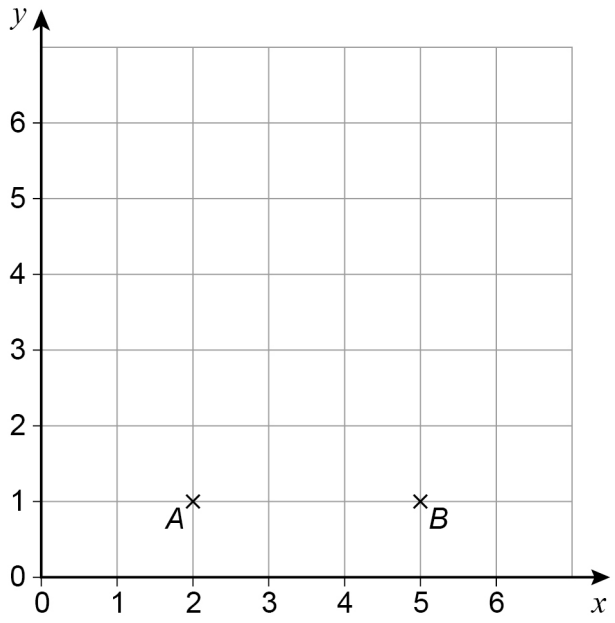
13 (a) Points *A* and *B* are shown on the centimetre grid.



Point *C* is plotted on the grid so that

it has x-coordinate 5

triangle *ABC* is isosceles.

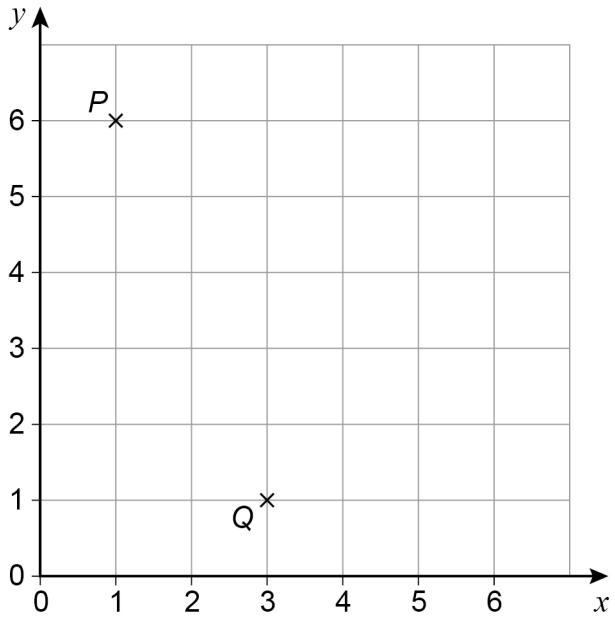
Work out the y-coordinate of *C*.

[1 mark]

Answer _____

Do not write outside the box

13 (b) Points *P* and *Q* are shown on the centimetre grid.



Point *R* is plotted on the grid so that

both coordinates are whole numbers

triangle *PQR* has an obtuse angle

one side of triangle *PQR* has length 3 cm

Write down the coordinates of **two** possible points for *R*.

[2 marks]

Answer (_____ , _____) and (_____ , _____)

Turn over for the next question

3

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14 Here is some information about 50 students.

	Wears glasses	**Has short hair**
Male	12	28
Female	18	9

One of the 50 students is chosen at random.

14 (a) Work out the probability that the student wears glasses.
Give your answer as a fraction in its simplest form.

[2 marks]

Answer _____

14 (b) Work out the probability that the student does **not** have short hair.
Give your answer as a decimal.

[2 marks]

Answer _____

Do not write outside the box

15 Harry has some $50 notes.

Imogen has some $20 notes.

Jonah has some $10 notes.

The total value of these notes is $1200

They each have the same number of notes.

Using some of his notes, Harry spends $100

How many notes does Harry have left?

[3 marks]

Answer _____

16 Calculate $\dfrac{4.5^2 - 3}{0.5^2 + 2}$

Give your answer to 3 significant figures.

[2 marks]

Answer _____

9

Turn over ►

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17

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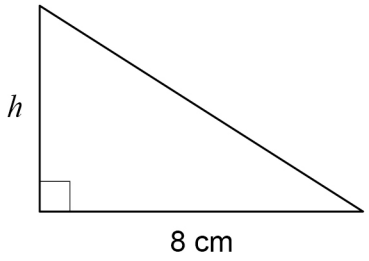

This right-angled triangle has area 28 cm^2

Work out the value of h.

[2 marks]

Answer _____ cm

18 Solve $\frac{2p}{5} = -20$

[2 marks]

$p =$ _____

Do not write outside the box

19 Serena has played 20 games of badminton.

She has won 12 of these games.

19 (a) What percentage of the games has she won?

[2 marks]

Answer _____ %

19 (b) She plays 15 more games.

She has now won $\frac{5}{7}$ of her games.

How many of the 15 games did she win?

[2 marks]

Answer _____

Turn over for the next question

8

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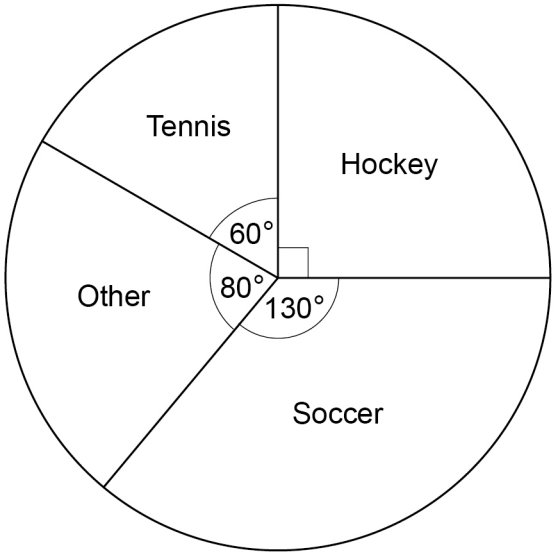
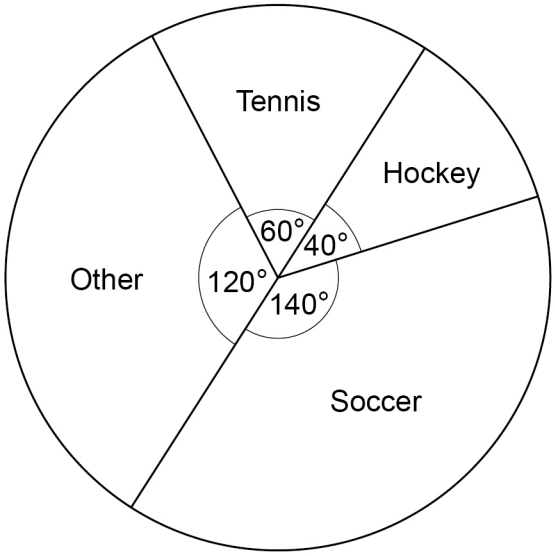
20 180 men and 180 women were asked to choose their favourite sport.

These pie charts show the results.

Men



Women



Do not write outside the box

Work out how many **more** men than women chose hockey.

[3 marks]

Answer _____

21 Rearrange $b = \frac{a}{4} + 10$ to make a the subject.

[2 marks]

Answer _____

5

Turn over ►

Do not write outside the box

22 (a) Solve $3(x + 2) = 1 - 2x$

[3 marks]

$x =$ _____

22 (b) Factorise fully $3t^2 - 6t$

[2 marks]

Answer _____

22 (c) Simplify $\frac{h^2}{h^5}$

[1 mark]

Answer _____

Do not write outside the box

23 Circle the size of each **interior** angle in a regular hexagon.

[1 mark]

60° 108° 120° 135°

24 Circle the expression that is equivalent to $(3x^2)^3$

[1 mark]

$9x^5$ $9x^6$ $27x^5$ $27x^6$

25 Circle the equation that has the solution $x = -3$

[1 mark]

$(x - 3)^2 = 0$ $(x + 3)^2 = 0$

$(3x - 1)^2 = 0$ $(3x + 1)^2 = 0$

Turn over for the next question

9

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26 Lee is training for a marathon.

In week 1 he runs 40 km

In week 2 he runs 55 km

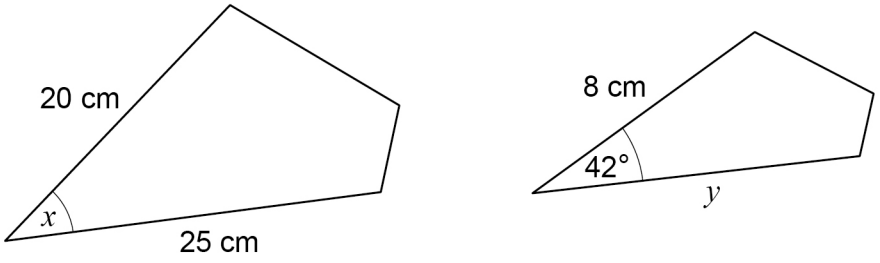
Work out the percentage increase in distance from week 1 to week 2

[3 marks]

Answer _____ %

27 Here are two similar shapes.

Not drawn accurately



Work out the values of x and y.

[3 marks]

$x =$ _____ ° $y =$ _____ cm

Do not write outside the box

28 (a) Here are the first four terms of an arithmetic progression.

-10 -7 -4 -1

Circle the nth term.

[1 mark]

$3n - 7$ $-7 - 3n$ $3n - 13$ $-13 - 3n$

28 (b) A different arithmetic progression has nth term $8n + 5$

The sum of two consecutive terms is 130

Work out the values of the two terms.

[3 marks]

Answer _____ and _____

10

Do not write outside the box

29 For this question use a ruler and compasses.

Lizzie is sailing near three markers, *A*, *B* and *C*.

She is

closer to *AC* than to *AB*

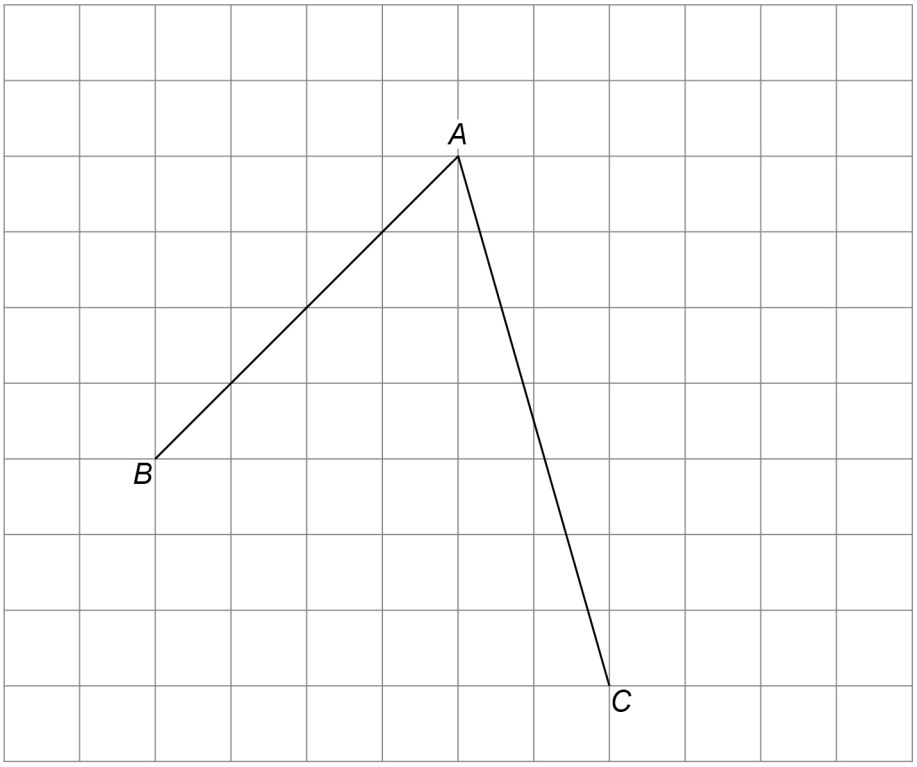
less than 400 m from *B*.

Construct the region where Lizzie could be.

Label this region R.

[4 marks]

Scale: 1 cm represents 100 m



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30 250 students at a college were asked how many hours they studied each weekend.
The table shows the results.

Hours, h	Frequency
$0 \leqslant h < 2$	20
$2 \leqslant h < 4$	39
$4 \leqslant h < 6$	43
$6 \leqslant h < 8$	46
$8 \leqslant h < 10$	78
$h \geqslant 10$	24

30 (a) Work out the class interval that contains the median.

[1 mark]

Answer _____

30 (b) The college has 7500 students.

Estimate how many of these students study **less than** 2 hours each weekend.

[2 marks]

Answer _____

END OF QUESTIONS

7

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