OXFORD

INTERNATIONAL AQA EXAMINATIONS

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

I declare this is my own work.

INTERNATIONAL GCSE

MATHEMATICS CORE

C

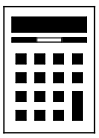
Paper 1C

Monday 8 November 2021 07:00 GMT Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments
- the Formulae Sheet (enclosed).



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	
24	
TOTAL	

Do not write outside the box

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

1 Circle the fraction equivalent to $\frac{2}{3}$

[1 mark]

$\frac{5}{6}$ $\frac{12}{18}$ $\frac{18}{24}$ $\frac{25}{35}$

2 Solve $\frac{x}{5} = 25$

Circle your answer.

[1 mark]

$x = 5$ $x = 20$ $x = 30$ $x = 125$

3 Here are five numbers.

19 18 16 13 19

Which of the following is the median?

Circle your answer.

[1 mark]

16 17 18 19

Do not write outside the box

4 Circle the number that is closest in value to 510

[1 mark]

509.09 510.25 510.275 509.5

5 (a) Simplify fully $\frac{1}{4} \times 20d$

[1 mark]

Answer _____

5 (b) Simplify fully $21w \div 3w$

[1 mark]

Answer _____

Turn over for the next question

6

Do not write outside the box

6 Sue is filling jars with sweets.

She has 600 sweets.

Each jar can hold 32 sweets.

She fills as many jars as possible.

How many sweets are left over?

[2 marks]

Answer _____

7 (a) Write a number in each box to make the calculation correct.

[1 mark]

$\square + \square = -3$

7 (b) Write a number in each box to make the calculation correct.

[1 mark]

$\square - \square = -3$

Do not write outside the box

8 The pictogram shows the colours of cars in a car park.

Key:  represents 2 cars

Red	
Blue	
Silver	
White	
Black	

8 (a) How many black cars are there?

[1 mark]

Answer _____

8 (b) How many **more** white cars than red cars are there?

[2 marks]

_____

_____

_____

Answer _____

7

Turn over ►

Do not write outside the box

9 The table shows the items Jack bought to decorate his bedroom.

It also shows some of the costs.

	Cost ($)
Wallpaper	6.50 per roll
Paint	14.95
Brush	
Paste	2.75

He bought 5 rolls of wallpaper.

The **total** cost of all the items was $54.55

Work out the cost of the brush.

[3 marks]

Answer $ _____

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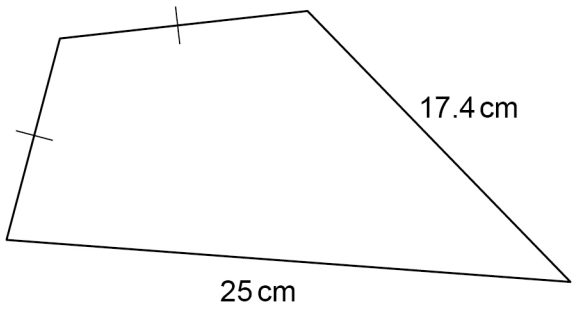
10 Two sides of a quadrilateral are equal.

The other two sides are 25 cm and 17.4 cm



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The perimeter of the quadrilateral is 70 cm

Work out the length of one of the equal sides.

[3 marks]

Answer _____ cm

6

Turn over ►

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11 Beads in a bag are red, yellow or blue.

	Red	**Yellow**	**Blue**	**Total**
Number of beads	$2n$	$5n + 1$		$10n + 8$

11 (a) Complete the table with a simplified expression.

[2 marks]

11 (b) There are 16 red beads.

How many yellow beads are there?

[3 marks]

Answer _____

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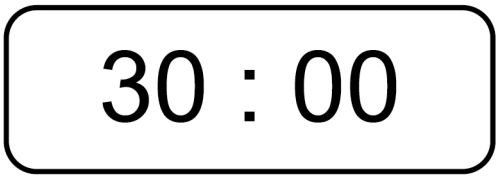
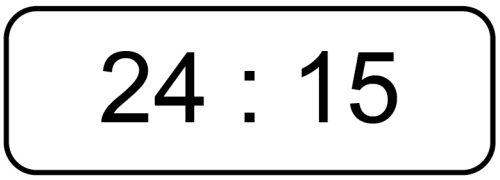
12 Joe has 30 minutes to complete a computer game.

A timer on the screen counts down from 30 minutes, in minutes and seconds.



When Joe completes level 1 of the game he sees this time.



12 (a) How long does it take Joe to play level 1 ?

Give your answer in minutes and seconds.

[1 mark]

Answer _____ minutes _____ seconds

12 (b) Joe completes level 2 when the timer **next** shows the digits 1, 2, 4 and 5

What does the timer show when he completes level 2 ?

[2 marks]

Answer _____

8

Turn over ►

Do not write outside the box

13 Three whole numbers have

a mode of 20

and

a total of 62

Work out the three numbers.

[2 marks]

Answer _____ , _____ , _____

14 A recipe for making plum jam is shown.

1.5 kg of plums
150 ml of water
1.6 kg of sugar
25 g of pectin

Amir uses 4.2 kg of plums to make some jam.

How much pectin does he need?

[2 marks]

Answer _____ g

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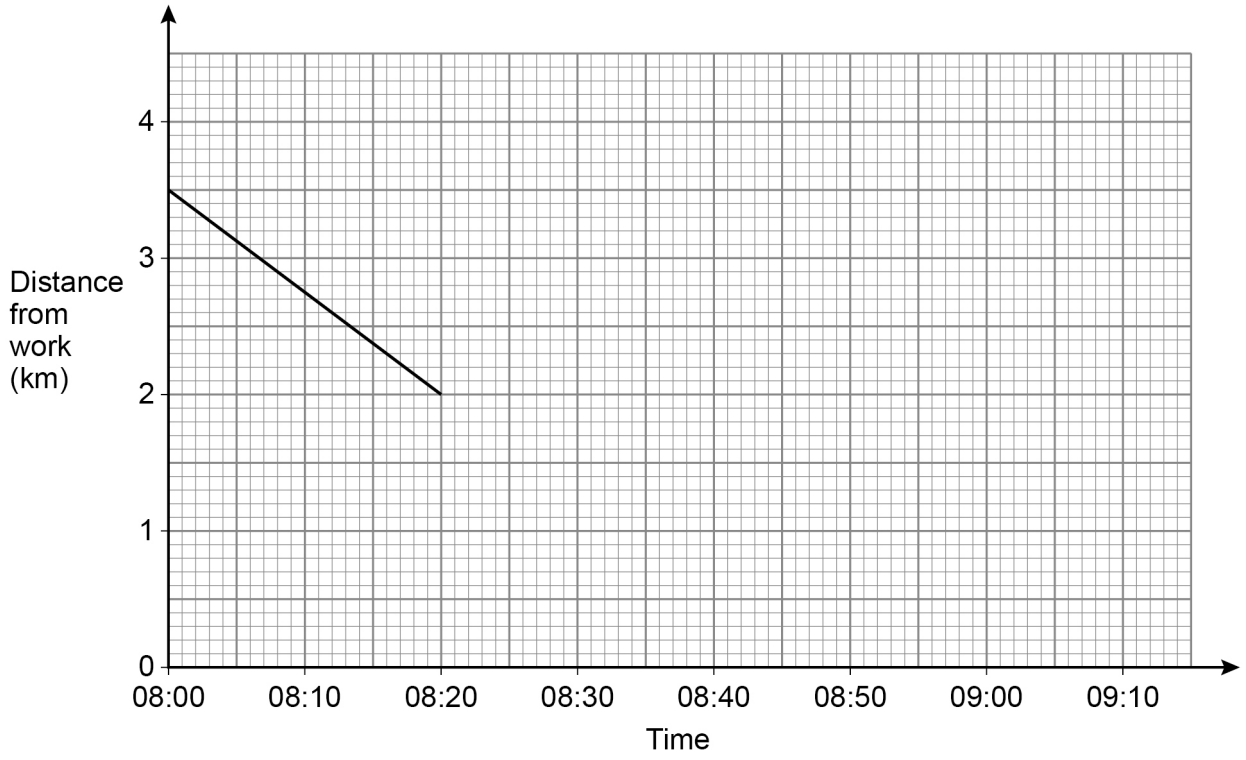
15 Rick leaves home at 08:00 and begins to walk to work.

Here is part of a distance-time graph of his walk.



15 (a) How far does Rick walk in the first 20 minutes?

Circle your answer.

[1 mark]

1.5 km 2 km 2.75 km 3.5 km

15 (b) At 08:20 Rick stops for a coffee for 15 minutes.

He then finishes his walk at a constant speed.

He arrives at work at 09:05

Complete the distance-time graph.

[2 marks]

7

Turn over ►

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16 An **even** number has four **different** digits.

Each digit is a factor of 18

The number is 10 000 to the nearest thousand.

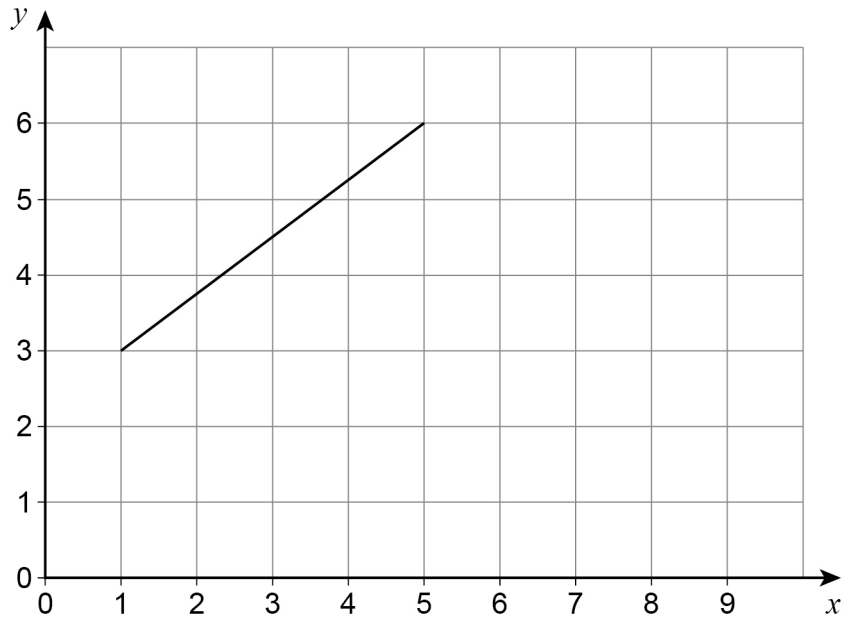
Work out the two possible **even** four-digit numbers.

[3 marks]

Answer _____ and _____

17 (a) Each vertex of an **isosceles** triangle has integer coordinates.

One side of the triangle joins (1, 3) and (5, 6) on a square grid.



Work out **two** possible positions on the grid for the other vertex.

[2 marks]

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

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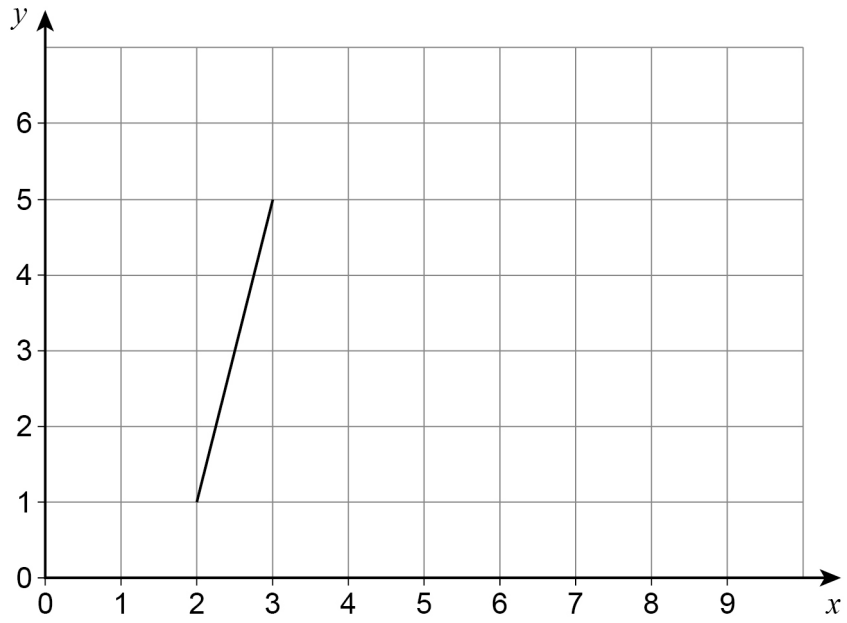
17 (b) Each vertex of a **quadrilateral** has integer coordinates.

One side of the quadrilateral joins (2, 1) and (3, 5) on a square grid.



The quadrilateral has two horizontal sides.

One horizontal side is three times as long as the other.

Work out possible positions on the grid for the other two vertices.

[2 marks]

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

Turn over for the next question

7

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18 Here are the usual ticket prices for a concert.

Adult $52

Child $34

Eva uses the offer to buy tickets for one adult and one child.

She pays with four $20 notes.

How much change should she get?

[4 marks]

Answer $ _____

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19 *AB* and *CD* are parallel lines.

PR and *QR* are straight lines.

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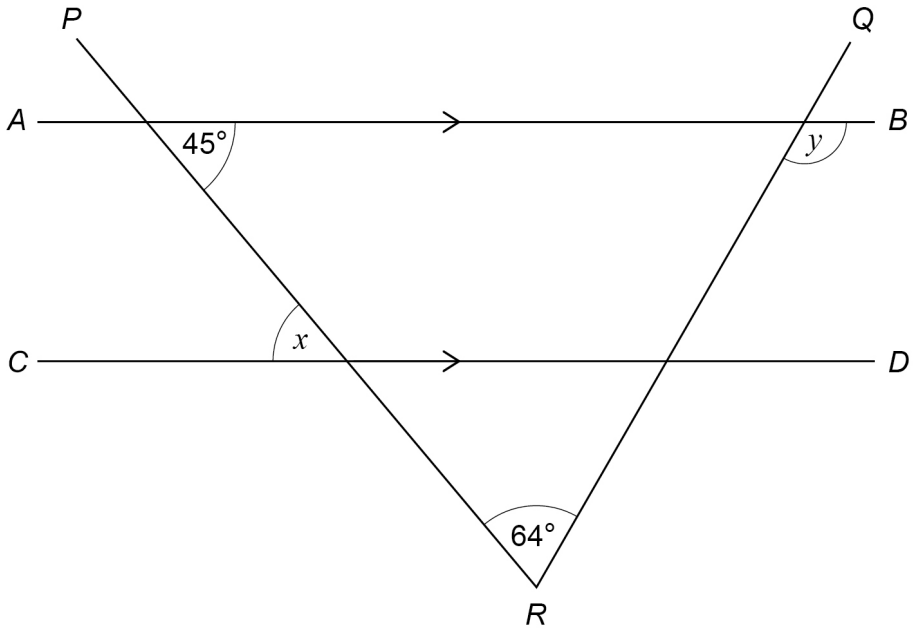

19 (a) Write down the size of angle x.

[1 mark]

$x =$ _____ °

19 (b) Work out the size of angle y.

[2 marks]

_____

_____

$y =$ _____ °

7

Turn over ►

Do not write outside the box

20 Amy and Brad play a game 100 times.

Amy goes first in half of the games.

20 (a) Complete the table.

[2 marks]

	Amy wins	**Brad wins**	**Total**
Amy goes first	38		
Brad goes first			
Total		35	100

20 (b) Amy and Brad play the game 40 **more** times.

Amy goes first in half of the games.

Using the data, how many of these 40 games do you expect Brad to win?

[2 marks]

Answer _____

Do not write outside the box

21 The point (8, 1) is translated to the point (3, 1)

Circle the translation vector.

[1 mark]

$\begin{pmatrix} 5 \\ 0 \end{pmatrix}$ $\begin{pmatrix} -5 \\ 0 \end{pmatrix}$ $\begin{pmatrix} 0 \\ 5 \end{pmatrix}$ $\begin{pmatrix} 0 \\ -5 \end{pmatrix}$

22 The equation of a line is $y = 7 - 4x$

Circle the coordinates of the y-intercept.

[1 mark]

(7, 0) (0, 7) (–4, 0) (0, –4)

23 A prism has 12 vertices.

How many edges does the prism have?
Circle your answer.

[1 mark]

6 8 12 18

Turn over for the next question

7

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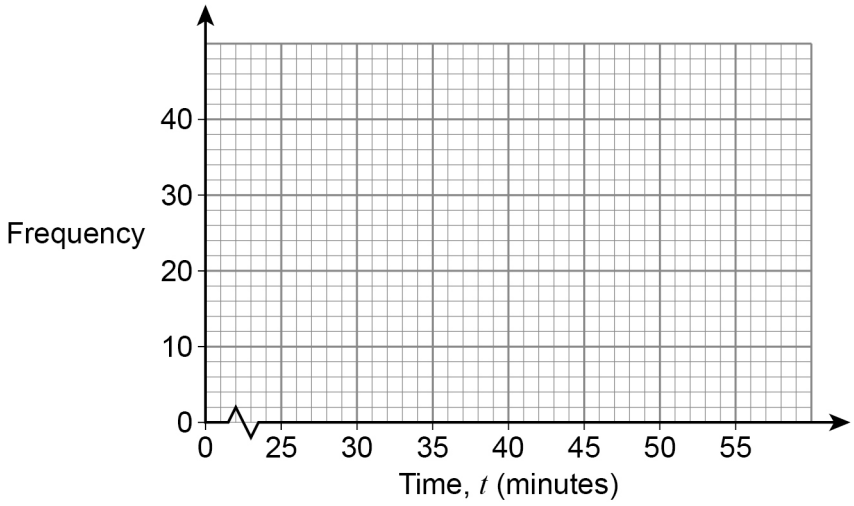
24 76 people finished a race.

The table shows their times.

Time, t (minutes)	**Frequency**
$30 \leqslant t < 35$	38
$35 \leqslant t < 40$	22
$40 \leqslant t < 45$	10
$45 \leqslant t < 50$	6

24 (a) Draw a frequency polygon to represent the data.

[2 marks]



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24 (b) Four other people started the race but did **not** finish.

Work out the percentage of people in the race who did **not** finish.

[2 marks]

Answer _____ %

25 Write these numbers in order of size, starting with the **smallest**.

3.8×10^4 1.6×10^7 5.3×10^4

[2 marks]

smallest _____

_____

largest _____

6

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26 (a) The first four terms of a linear sequence are

$$-5 \qquad 3 \qquad 11 \qquad 19$$

Work out an expression for the nth term.

[2 marks]

Answer _____

26 (b) A different sequence has nth term $\dfrac{48-n^2}{n}$

Work out the sum of the 5th term and the 6th term.

[2 marks]

Answer _____

Do not write outside the box

27 Five of the interior angles of a hexagon add up to 610°

Work out the size of the other interior angle.

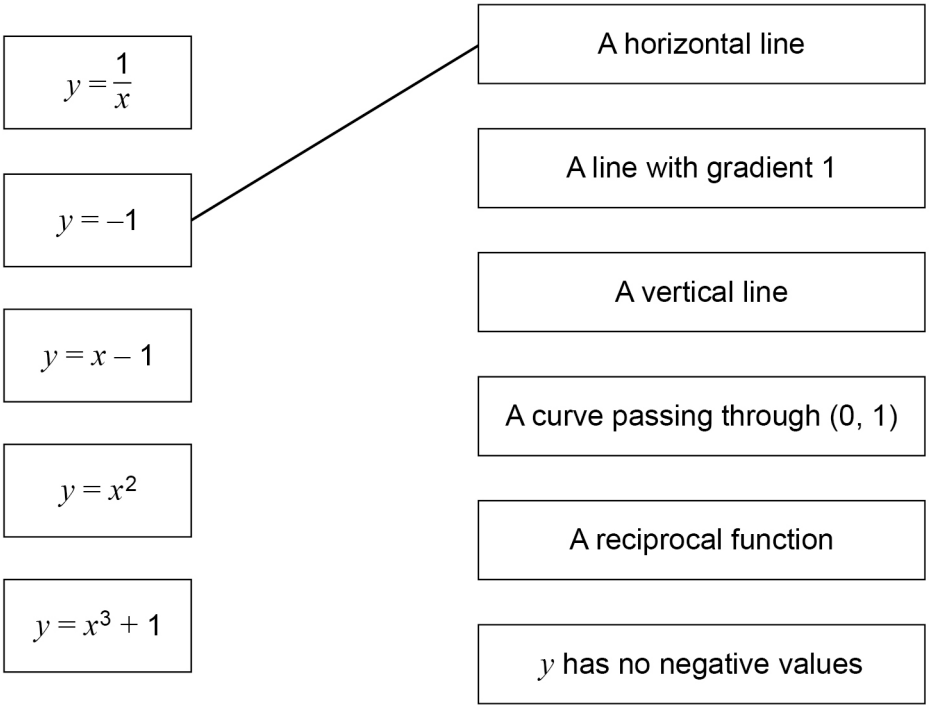
[2 marks]

Answer _____ °

28 Match each equation to a description of its graph.

One has been done for you.

[4 marks]



10

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29 Here is some information about the length of time that 120 students were online.

Time, t (hours)	**Frequency**	**Midpoint**	
$0 \leqslant t < 2$	66		
$2 \leqslant t < 4$	26		
$4 \leqslant t < 6$	20		
$6 \leqslant t < 8$	8		

Work out an estimate for the mean time.

Give your answer in hours and minutes.

[3 marks]

Answer _____ hours _____ minutes

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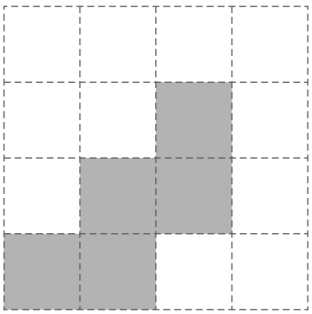
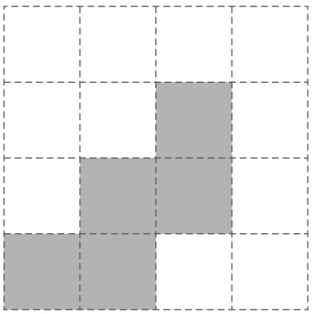
30 (a) Shade **one** more square so that the shaded shape is the net of a cube.

[1 mark]



30 (b) Shade a **different** square so that the shaded shape is the net of a cube.

[1 mark]



Turn over for the next question

5

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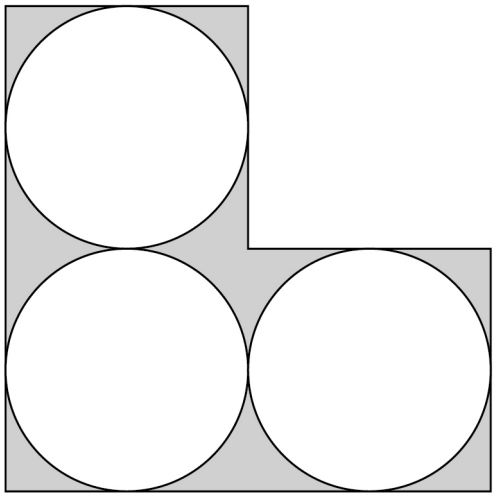
31 Three identical circles, each of radius 5 cm, just fit into an L-shape.



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Work out the shaded area.

Give your answer as a decimal.

[4 marks]

Answer _____ cm^2

END OF QUESTIONS

4

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ANSWER IN THE SPACES PROVIDED

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Question number	**Additional page, if required.** **Write the question numbers in the left-hand margin.**

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