

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

I declare this is my own work.

INTERNATIONAL GCSE MATHEMATICS CORE

C

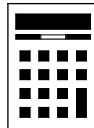
Paper 2C

Wednesday 17 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

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	
TOTAL	

Advice

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



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

1 (a) Circle the value of the digit 6 in the number 16 435

[1 mark]

6

600

6000

60 000

1 (b) Circle the value of the digit 9 in the number 5.394

[1 mark]

$\frac{1}{9}$

$\frac{1}{90}$

$\frac{9}{10}$

$\frac{9}{100}$

2 n boxes each contain 10 books.

Circle the expression for the total number of books.

[1 mark]

$10 + n$

$10n$

$\frac{n}{10}$

$\frac{10}{n}$



3 How many metres are equal to 5.3 kilometres?

Circle your answer.

[1 mark]

0.0053

0.053

530

5300

4 x and y are whole numbers.

x is greater than y .

$$2x + y = 7$$

Work out the values of x and y .

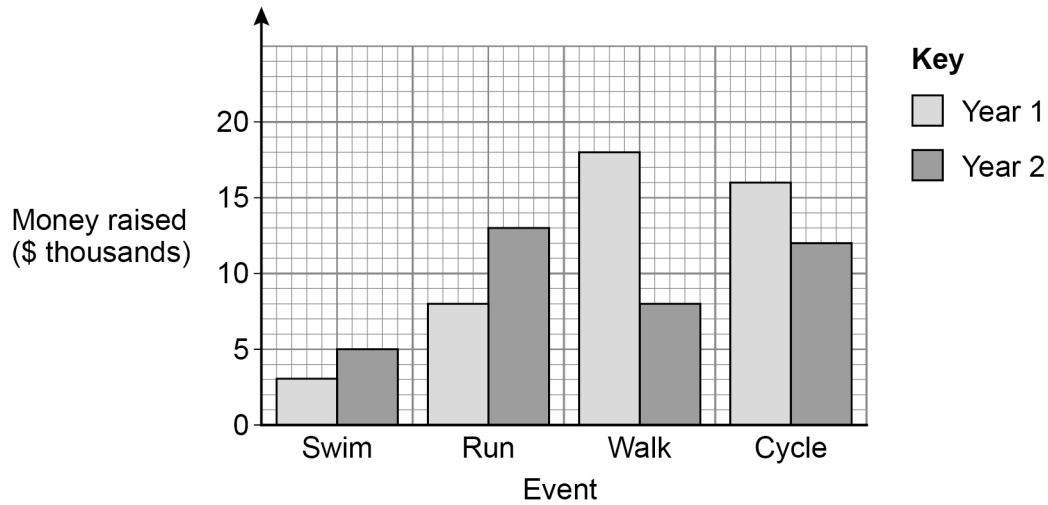
[2 marks]

$x =$ _____ $y =$ _____

Turn over for the next question



- 5 A charity organises sponsored events to raise money.
The bar chart shows how much money was raised at each event in two different years.



- 5 (a) Which event raised \$8000 in Year 1 ?

[1 mark]

Answer _____

- 5 (b) How much **more** money was raised from the Swim event in Year 2 than in Year 1 ?

[1 mark]

Answer \$ _____

- 5 (c) 96 people took part in the Cycle event in Year 2

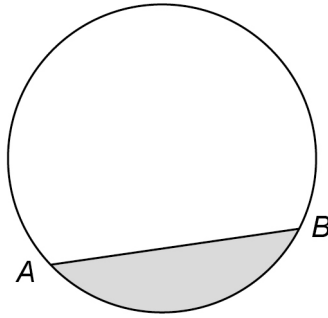
Work out the mean amount of money per person raised from the Cycle event in Year 2

[3 marks]

Answer \$ _____



- 6 A and B are two points on a circle.



Complete each statement using a word from this list.

arc sector chord segment tangent

[2 marks]

The shaded area is a _____

The straight line AB is a _____

- 7 Kasim has 12 coins.

Jo has half as many coins as Kasim.

Kasim has a third as many coins as Lin.

What fraction of **all** the coins does Kasim have?

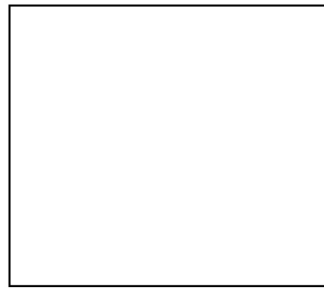
[3 marks]

Answer _____

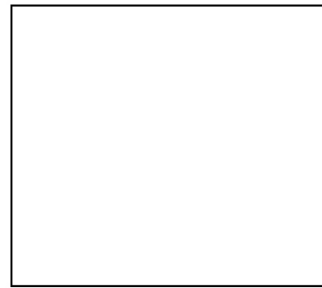


8

Here are two identical squares.



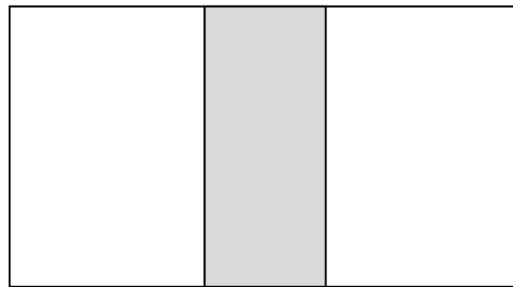
10 cm



10 cm

Not drawn
accurately

The squares overlap to make a rectangle of length 17 cm



← 17 cm →

Not drawn
accuratelyWork out the total **unshaded** area.**[3 marks]**

Answer _____ cm²

9

64 is a 2-digit number.

The digit sum is $6 + 4 = 10$

9 (a) Write down the largest 2-digit number with a digit sum of 10

[1 mark]

Answer _____

9 (b)

811 is a 3-digit number.

The digit sum is $8 + 1 + 1 = 10$

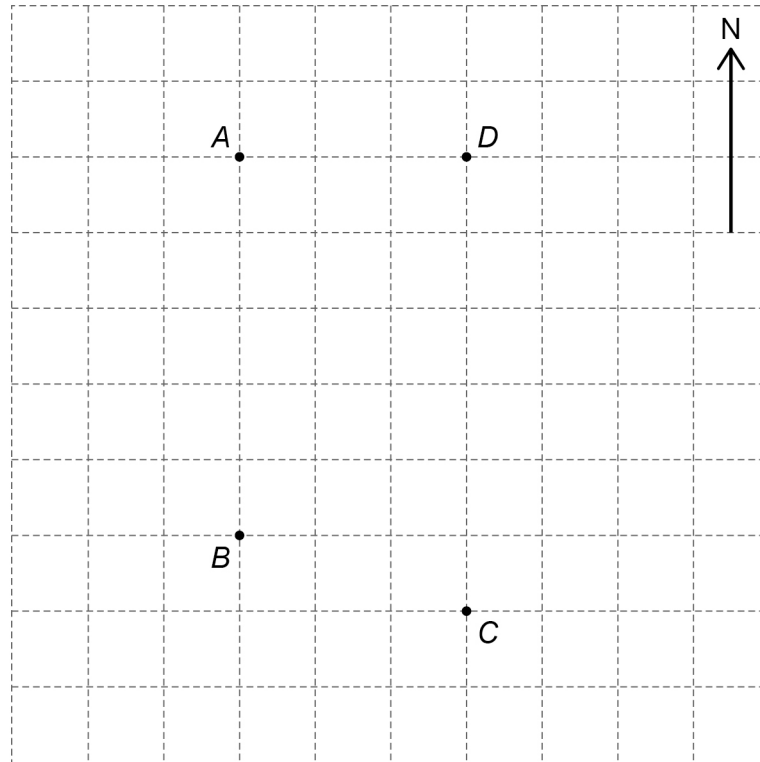
Work out a 3-digit number that
is a multiple of 25
and
has a digit sum of 10

[2 marks]_____

Answer _____

Turn over for the next question**Turn over ►**

- 10** A map is drawn to scale on a square grid.
A, B, C and D are four points on the map.



- 10 (a)** Circle the direction of B from A.

[1 mark]

North

East

South

West

- 10 (b)** Circle the 3-figure bearing of A from D.

[1 mark]

000°

090°

180°

270°



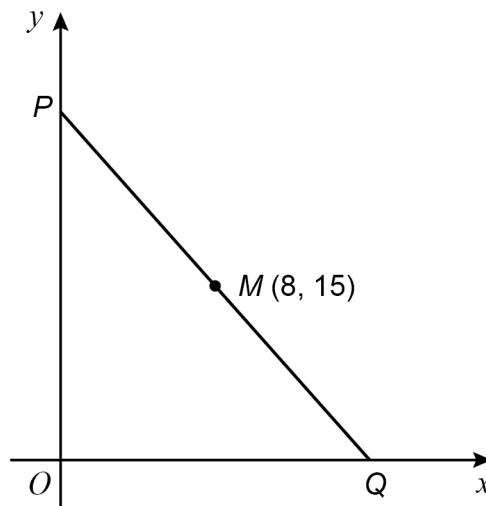
10 (c) The actual distance between C and D is 24 km

Work out the actual distance between A and B .

[2 marks]

Answer _____ km

11 P is a point on the y -axis.
 Q is a point on the x -axis.
 M is the midpoint of PQ .



Not drawn
accurately

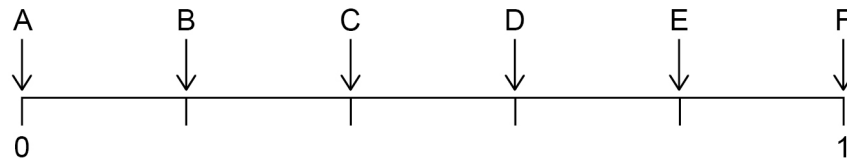
Work out the coordinates of P and Q .

[2 marks]

P (_____ , _____) Q (_____ , _____)



12 The probabilities of six events are shown on the probability scale.



12 (a) Which event is certain to happen?

[1 mark]

Answer _____

12 (b) Which event is twice as likely to happen as B?

[1 mark]

Answer _____

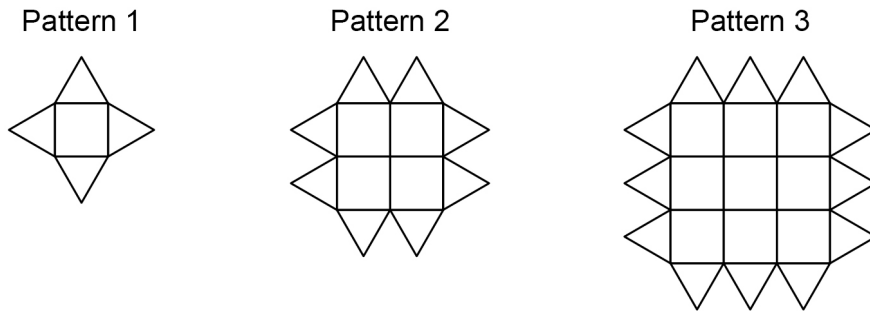
12 (c) Work out which event has a probability equal to $1 - P(C)$

[1 mark]

Answer _____



13 A sequence of patterns is made from square tiles and triangular tiles.
Here are the first three patterns.



13 (a) Complete the table.

[2 marks]

Pattern	1	2	3	4	5
Number of square tiles	1	4			
Number of triangular tiles	4	8			

13 (b) A pattern in the sequence has between 200 and 250 **square** tiles.

How many **triangular** tiles are in the pattern?

[3 marks]

Answer _____

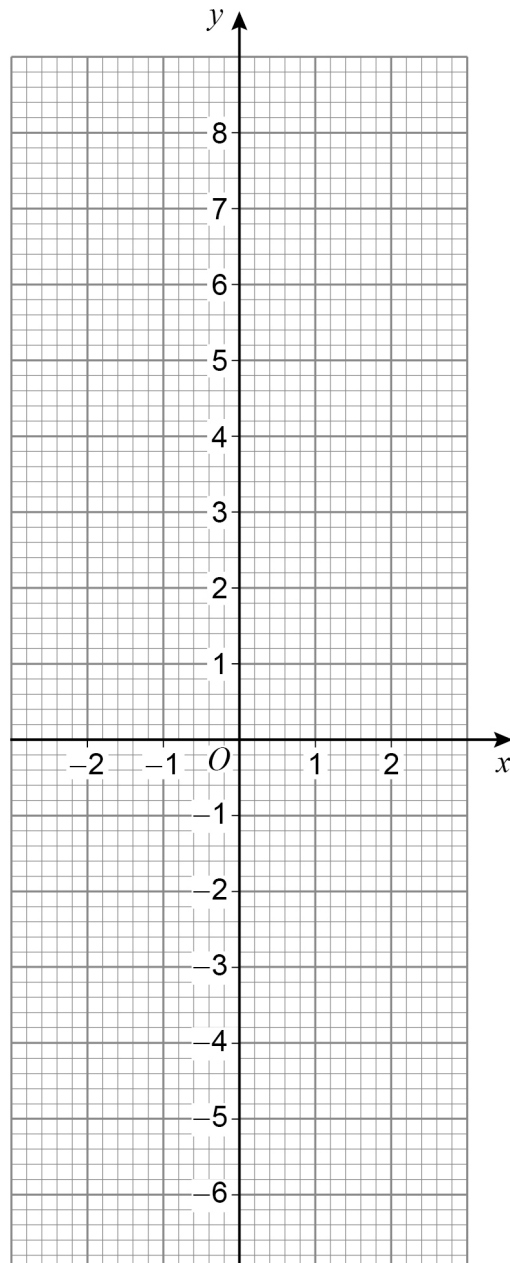
8

Turn over ►



14 Draw the graph of $y = 3x + 1$ for values of x from -2 to 2

[3 marks]



15 Here is a list of shapes.

Square (S)

Rectangle (R)

Parallelogram (P)

Equilateral triangle (E)

Isosceles triangle (I)

Put the letter of each shape into **one** box in the table.

One has been done for you.

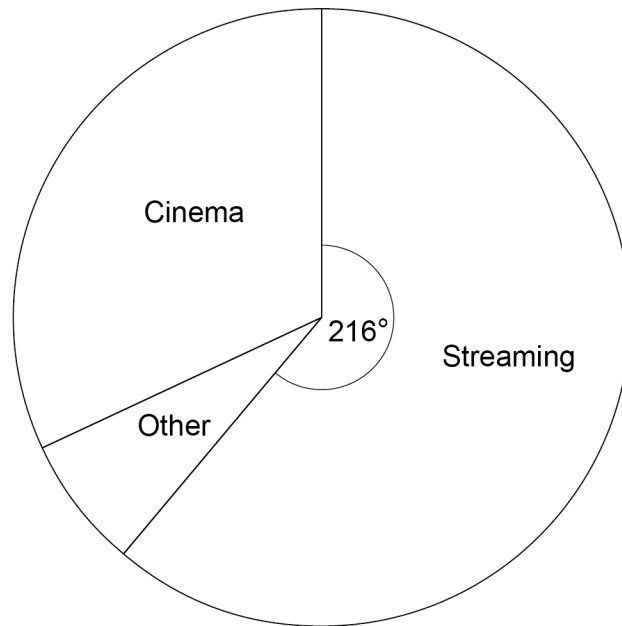
[4 marks]

		Lines of symmetry				
		0	1	2	3	4
Order of rotational symmetry	1					
	2					
	3					
	4					S

Turn over ►



- 16** A survey asked some people how they usually watch films.
A pie chart is drawn to represent their answers.



- 16 (a)** Three times as many people said Cinema as said Other.

Work out the angle for Cinema.

[3 marks]

Answer _____ °



- 16 (b)** 400 people were in the survey.
How many people said Streaming?

[3 marks]

Answer _____

- 17** The formula for converting x m/s to y km/h is $y = \frac{18x}{5}$

- 17 (a)** Convert 17.5 m/s to km/h

[1 mark]

Answer _____ km/h

- 17 (b)** Rearrange $y = \frac{18x}{5}$ to make x the subject.

[2 marks]

Answer _____



- 18** Factorise fully $6cd^2 - 3c^2d$ **[2 marks]**

Answer _____

- 19** Work out $\sqrt{6339}$ to 2 significant figures.
Circle your answer. **[1 mark]**

79.61

79.62

79

80

- 20** Work out 1.24 as a fraction of 0.6
Circle your answer. **[1 mark]**

 $\frac{15}{31}$ $\frac{31}{15}$ $\frac{3}{62}$ $\frac{62}{3}$ 

- 21** Jamael bought a car for \$2500
He sold the car for \$2350
Work out the percentage loss.

[3 marks]

Answer _____ %

- 22** n is an integer greater than 1
Tick **one** box for each expression.

[3 marks]

	Must be even	Must be odd	Could be even or odd
$3n$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$n^2 - n$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$2n^3 - 1$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



23

Show that $2\frac{2}{3} + 1\frac{11}{24} = 4\frac{1}{8}$ **[3 marks]**

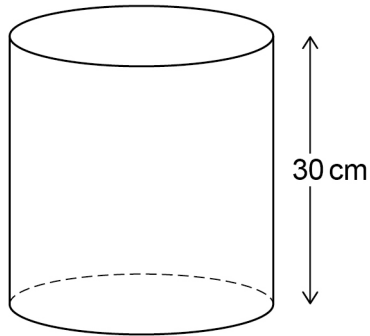
24

Simplify fully $3(x + 4) + 2(x - 2)$ **[2 marks]**

Answer _____



25 The height of a cylinder is 30 cm



The radius of the cylinder is two fifths of the height.

Work out the volume of the cylinder.

[3 marks]

Answer _____ cm^3

Turn over for the next question



26

A sports club has 100 members.

55 play tennis.

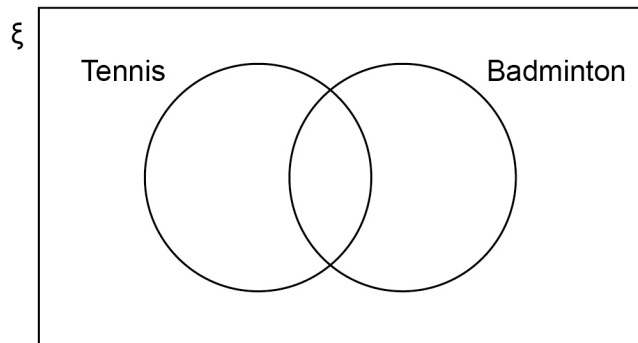
32 play badminton.

27 play tennis **and** badminton.

A member is chosen at random.

Work out the probability that this member plays **neither** tennis **nor** badminton.

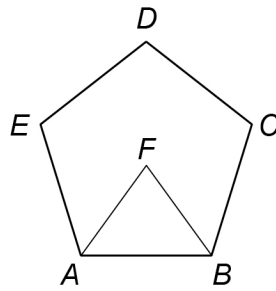
You may use the Venn diagram to help you.

[3 marks]

Answer _____



- 27 $ABCDE$ is a regular pentagon.
 F is the centre of the pentagon.

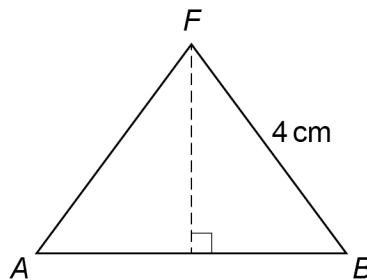


Not drawn
accurately

- 27 (a) Show that $\text{angle } AFB = 72^\circ$

[1 mark]

- 27 (b) $FB = 4 \text{ cm}$



Not drawn
accurately

Use trigonometry to work out the length AB .

[3 marks]

Answer _____ cm

7

Turn over ►



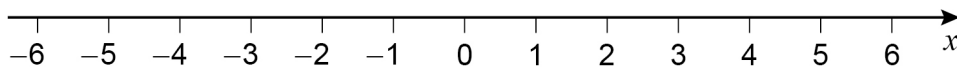
28 (a) Solve $4 - 3x \leq 10$

[2 marks]

Answer _____

28 (b) Represent $-1 < x < 5$ on the number line.

[1 mark]



END OF QUESTIONS



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ANSWER IN THE SPACES PROVIDED**



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2 8



2 1 B Y 9 2 6 0 / 2 C

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