AQA

GCSE
MATHEMATICS

F

Foundation Tier   Paper 3 Calculator

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
* mathematical instruments
* a calculator

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 outside the box around each page or 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.

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	
TOTAL	

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1 (a) Solve $3x = 12$

[1 mark]

$x =$ _____

1 (b) Solve $y + 6 = 15$

[1 mark]

$y =$ _____

1 (c) Solve $\dfrac{w}{4} = 5$

[1 mark]

$w =$ _____

2 (a) Work out $\dfrac{2}{7} \times 3$

[1 mark]

Answer _____

2 (b) Work out $\sqrt{529}$

[1 mark]

Answer _____

2 (c) Work out 3^4

[1 mark]

Answer _____

3 (a) An ordinary fair dice is thrown.

Work out the probability of getting a 4 or a 5

[2 marks]

Answer _____

3 (b) Work out the probability of **not** getting a 2

[1 mark]

Answer _____

9

Turn over ▶

4 Kara opens a pizza restaurant.

The frequency table shows information about the first 20 pizzas she sells.

Pizza	Frequency
Margherita	5
Pepperoni	8
Chicken	3
Vegetable	4
	Total = 20

4 (a) Complete the pictogram.

[3 marks]

Key: ◯ represents _2_ pizzas

Margherita	
Pepperoni	
Chicken	
Vegetable	

4 (b) What percentage of the 20 pizzas were **pepperoni**?

[2 marks]

Answer _____ %

4 (c)   At the restaurant, Ruth orders

food for £13.50

drinks for £2.40

She uses this voucher.

$\frac{1}{3}$ OFF THE PRICE OF FOOD

(Does **not** include drinks)

After the voucher has been used, 10% service charge is added.

Work out the final bill.

[5 marks]

Answer £ _____

Turn over for the next question

10

5 (a) 2 tubs of ice cream cost £5.90

How much would 5 of these tubs cost?

[3 marks]

Answer £ _____

5 (b) A factory makes 8000 tubs of ice cream.

Each tub contains 500 **millilitres**.

How many **litres** of ice cream does the factory make?

[2 marks]

Answer _____ litres

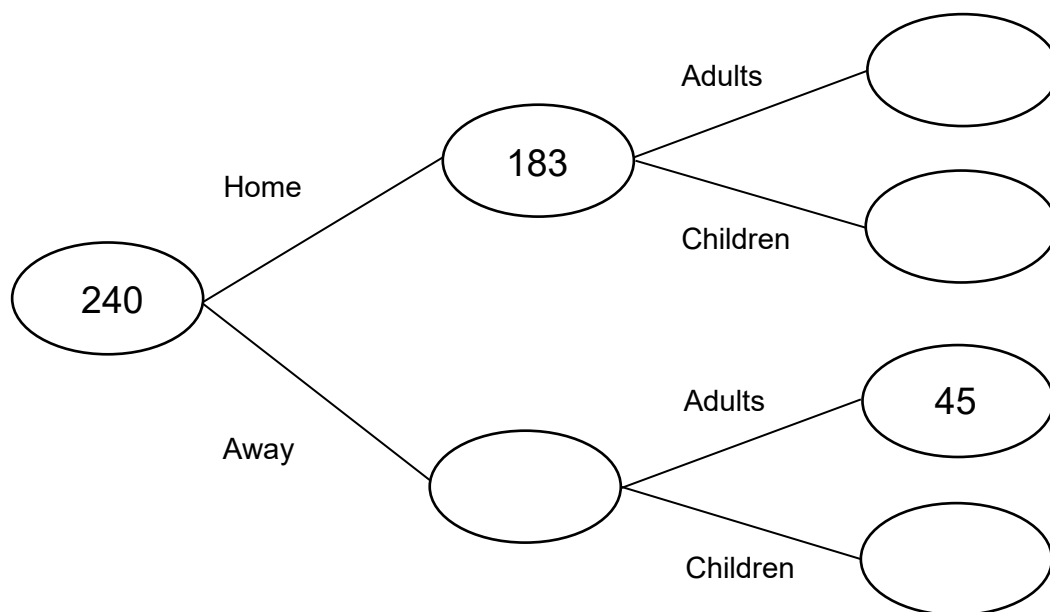**6**　240 people go to a rugby match.

183 of the people support the home team.
The other people support the away team.

162 of the people are adults.
45 of the **away** supporters are adults.

Complete the frequency tree.

[4 marks]

7　A house is being built.
8400 bricks will be laid.

Three bricklayers will each

　　　lay 350 bricks per day
　　　be paid £175 per day.

How much **in total** will they be paid?

[3 marks]

Answer £ _____

12

8 Work out the remainder when 8529 is divided by 42

[3 marks]

Answer _____

9 Zoe's password is made up of four digits.

She remembers it as two 2-digit numbers.

The first 2-digit number is a prime number between 10 and 20

The second 2-digit number is a prime number between 20 and 30

List her **eight** possible passwords.

[3 marks]

Answer _____ _____

_____ _____

_____ _____

_____ _____

10 (a) Work out the highest common factor (HCF) of 12 and 20

[2 marks]

Answer _____

10 (b) Work out the lowest common multiple (LCM) of 6 and 8

[2 marks]

Answer _____

11 Here is some information on a yoghurt pot.

Total contents 450 g

Sugar 57.15g

Harry tries to work out the amount of sugar in 100 grams of the yoghurt.

11 (a) His first answer is 61.65 grams.

Why **must** this be wrong?

[1 mark]

11 (b) Harry now tries this calculation.

450 ÷ 57.15 × 100

What error has he made?

[1 mark]

12   In a game, Anna has to describe a cuboid.

She must **not** use the word cuboid.

She says,

the shape has 6 faces

all faces are square

it has 10 vertices

Correct any mistakes Anna has made.

[2 marks]

13   During Year 9 a school runs a trip to the cinema and a trip to bowling.

125 students go to the cinema.

120 students go to bowling.
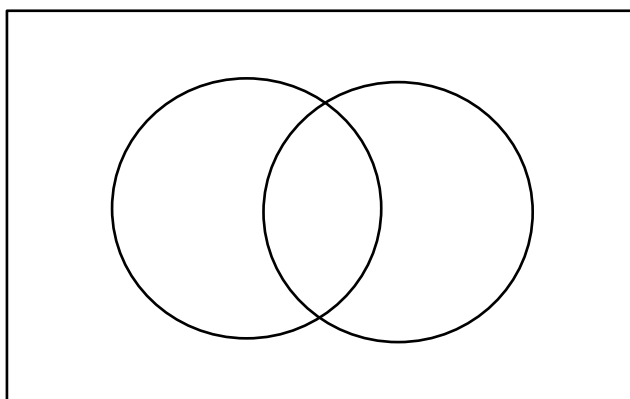
52 students go to both the cinema and bowling.

47 students do **not** go on either trip.

How many students are there in Year 9?

You may use the Venn diagram to help you.

[3 marks]

Answer _____

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED

5

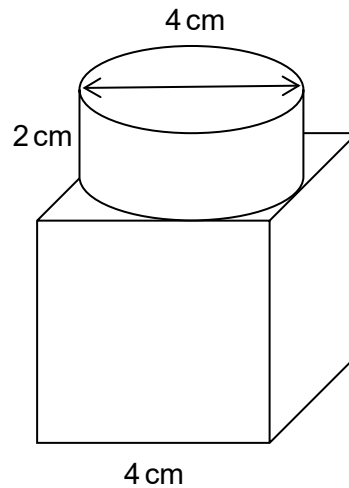**Turn over ▶**

14   A solid shape is made with a cube and a cylinder.

           The cube has edge length 4 cm
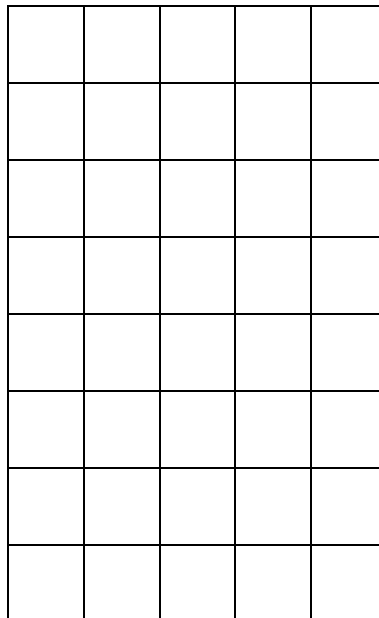
           The cylinder has diameter 4 cm and height 2 cm

14 (a)   The cylinder sits symmetrically on the centre of the top of the cube as shown.
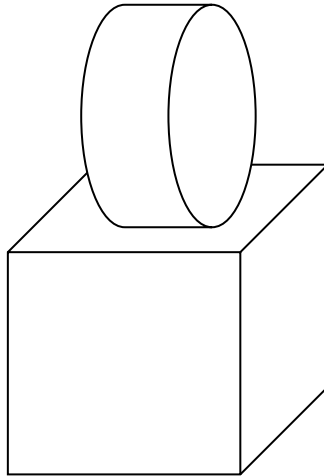
4 cm

Not drawn
accurately

2 cm

4 cm

           Draw the front elevation on the centimetre grid below.

[1 mark]

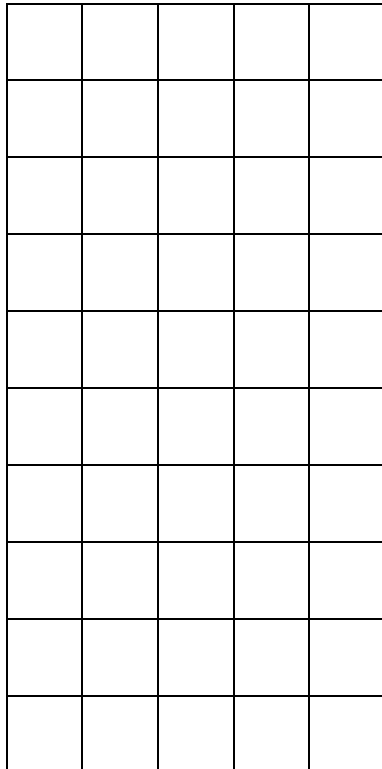**14 (b)**   The cylinder now sits symmetrically on the centre of the top of the cube as shown.
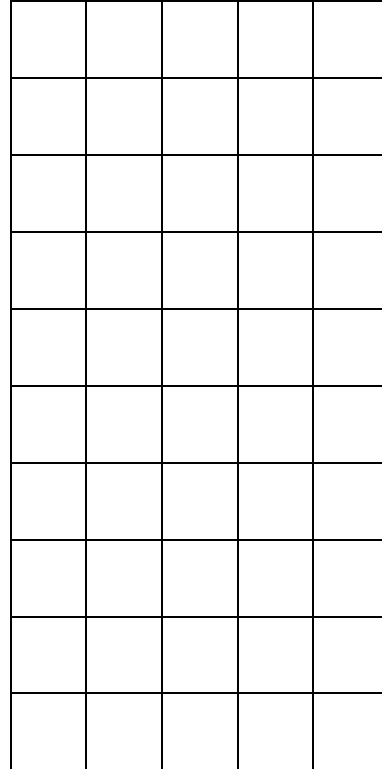

Draw the front elevation and the side elevation on the centimetre grids below.

[2 marks]

Front   **Side**

15 Here is a formula.

$$s = 5t^2$$

s is the distance in metres a ball falls when dropped.

t is the time taken in seconds.

15 (a) A ball is dropped.

1.2 seconds later it hits the floor.

What distance does the ball fall?
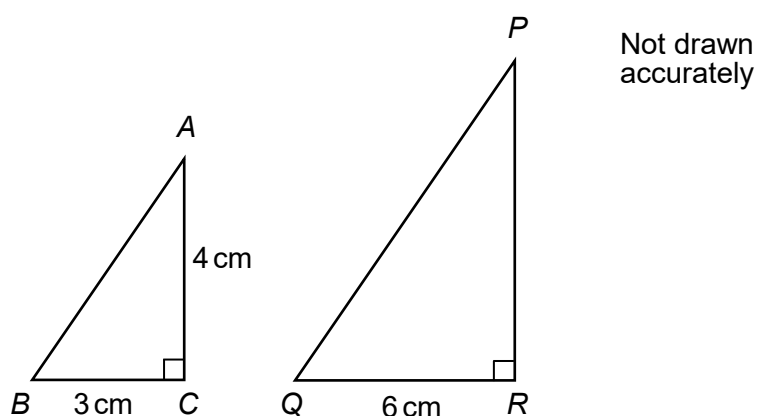
[2 marks]

Answer _____ m

15 (b) A different ball is dropped from 2 metres above the floor.

Work out the time taken for this ball to hit the floor.

[3 marks]

Answer _____ seconds

16 Here are two right-angled triangles.

P

Not drawn
accurately

A

4 cm

B   3 cm   C   Q   6 cm   R

16 (a) Assume that triangles *ABC* and *PQR* are similar.

Work out the area of triangle *PQR*.

[3 marks]

Answer _____ cm²

16 (b) In fact, *PR* is longer than it would be if the triangles were similar.

How does the actual area of *PQR* compare to the answer to part **(a)**?

[1 mark]

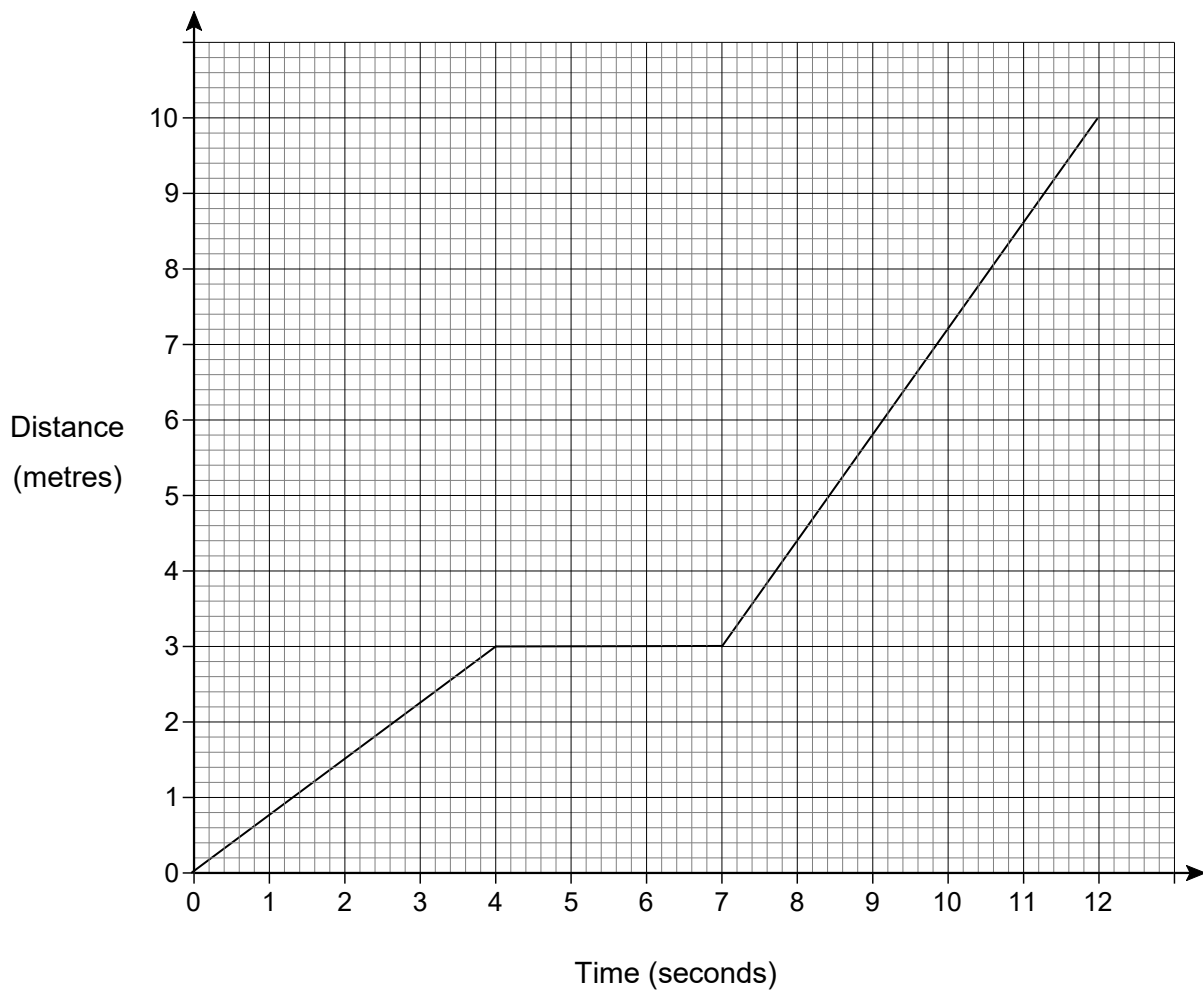It is larger than the answer to part **(a)**   ☐

It is the same as the answer to part **(a)**   ☐

It is smaller than the answer to part **(a)**   ☐

17 The distance-time graph shows the journey of a toy car.

17 (a) For how long is the toy car stationary?

[1 mark]

Answer _____ seconds

17 (b)   Work out the average speed for the last five seconds of the journey.

[2 marks]

Answer _____ m/s

18   Work out $(7.68 \times 10^9) \div (3.2 \times 10^4)$

Give your answer in standard form.

[2 marks]

Answer _____

19   The four possible outcomes of an experiment are *A*, *B*, *C* and *D*.

P(*A*) = 0.16
P(*B*) = 3P(*A*)
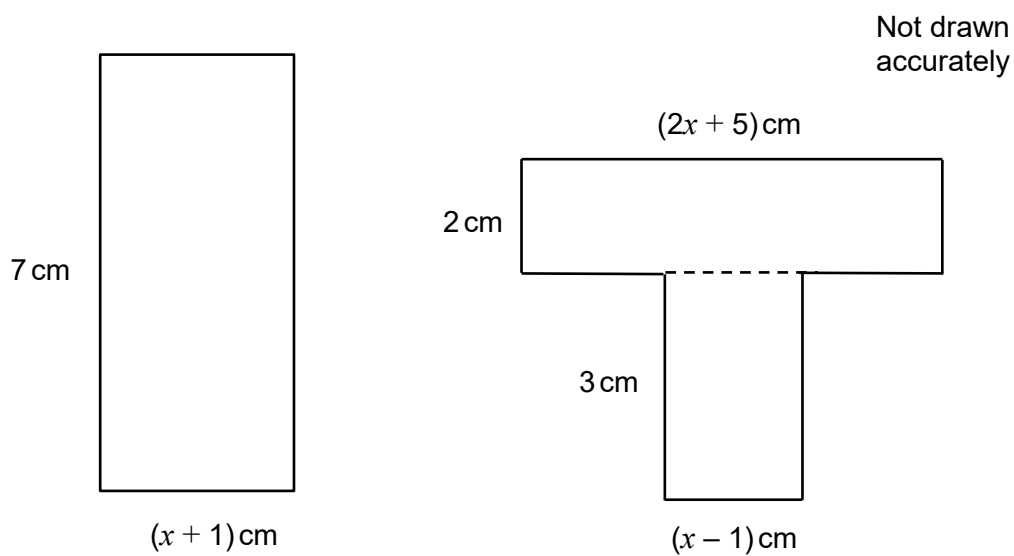P(*C*) = P(*D*)

Work out P(*D*)

[3 marks]

Answer _____

8

Turn over ▶

20 Here is

a rectangle

and

a T-shape made from two rectangles.

Not drawn accurately

$(2x + 5)$ cm

2 cm

7 cm

3 cm

$(x + 1)$ cm

$(x - 1)$ cm

Show, using algebra, that the rectangle and the T-shape have the same area.

[4 marks]

21   Use ruler and compasses for this question.

A wind turbine needs to be positioned

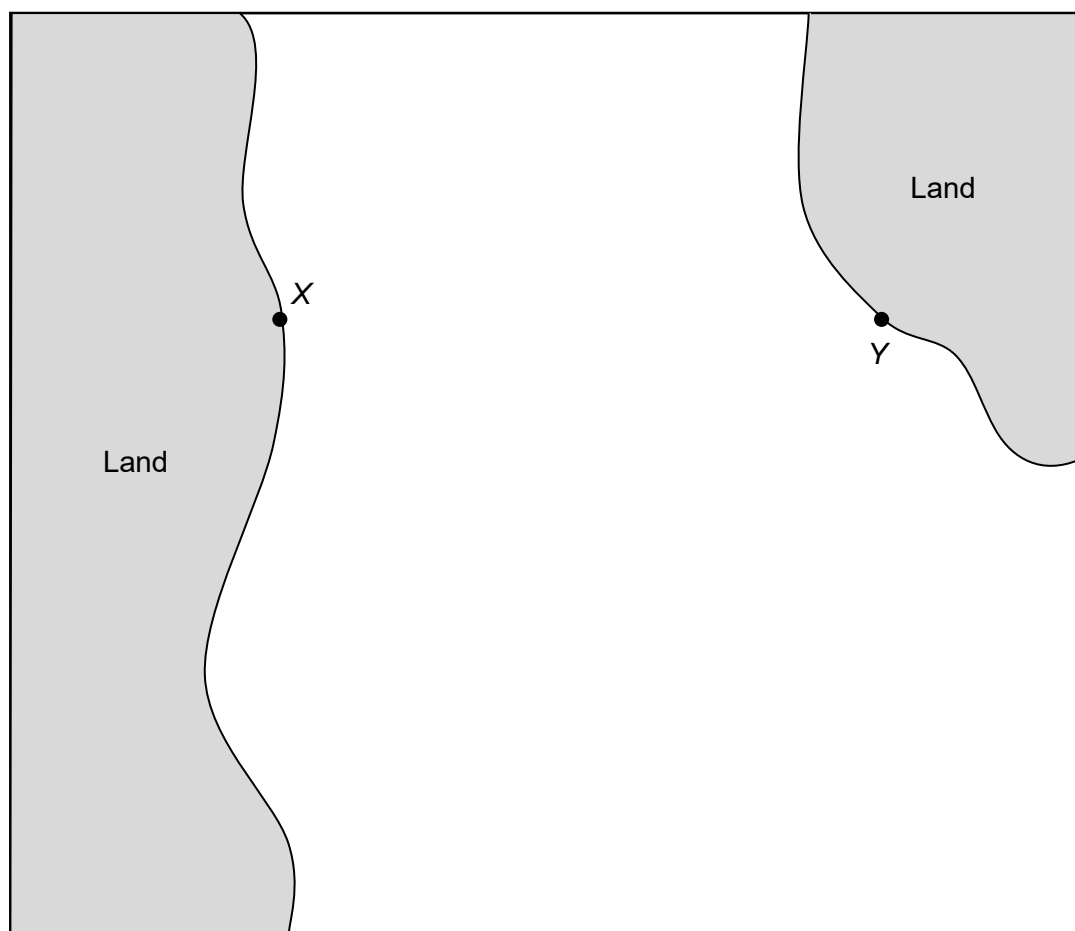closer to port *Y* than port *X*

less than 12 km from *X*.

The map below shows the positions of *X* and *Y*.

On the map, show the region where the wind turbine could be positioned.

Label it *R*.

[4 marks]

Scale   1 cm represents 2 km

Turn over ▶

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2023 Practice Paper Set 3

22 An electrician charges an hourly rate plus a fixed charge per job.

If the electrician does a 4 hour job, they earn £185

If the electrician does a 6 hour job, they earn £265

Work out the hourly rate and the fixed charge.

[4 marks]

Hourly rate _____

Fixed charge _____

END OF QUESTIONS

4