Pearson Edexcel International GCSE

Thursday 15 May 2025

Morning (Time: 2 hours)   **Paper reference** **4MA1/1FR**

Mathematics A
PAPER 1FR
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
- Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.

Advice

- Read each question carefully before you start to answer it.
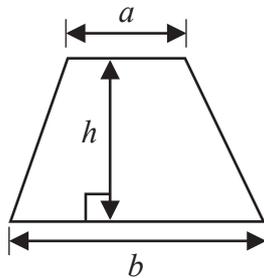- Check your answers if you have time at the end.
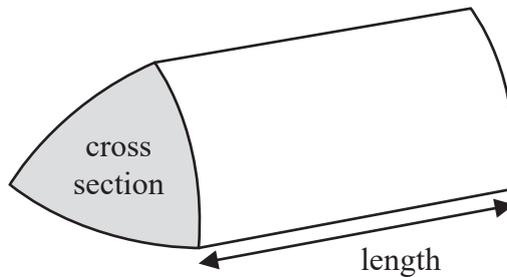
Turn over ▶

International GCSE Mathematics

Formulae sheet – Foundation Tier

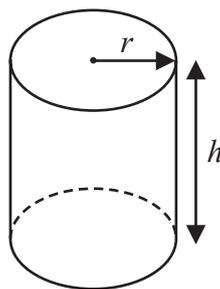**Area of trapezium** $= \dfrac{1}{2}(a + b)h$

Volume of prism = area of cross section $\times$ length

Volume of cylinder $= \pi r^2 h$

Curved surface area of cylinder $= 2\pi rh$

Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   The table shows the land area, in km^2, of each of six US states.

State	Land area (km²)
Arizona	294 207
Florida	138 887
Montana	376 962
New Mexico	314 161
Oregon	248 608
Washington	172 119

(a) Which one of these six US states has the greatest land area?

....
(1)

(b) Write the number 314 161 correct to the nearest hundred.

....
(1)

(c) Write down the value of the 4 in the number 294 207

....
(1)

(d) Work out the sum of the land area of Oregon and the land area of Washington.

.... km^2
(1)

The land area of Vermont is 23 871 km^2

(e) Write the number 23 871 in words.

....

....
(1)

(Total for Question 1 is 5 marks)

2 Freya has four cards.
There is a number on each card.

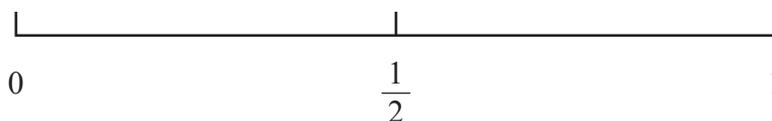$$\boxed{1} \quad \boxed{2} \quad \boxed{4} \quad \boxed{5}$$

Freya is going to pick at random one of these cards.

(a) Circle the word in the box below that best describes the likelihood that Freya will pick a card with the number 5 on it.

| impossible | unlikely | evens | likely | certain |

(1)

(b) On the probability scale below, mark with a cross (×) the probability that Freya will pick a card with a number less than 6 on it.

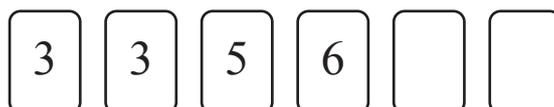$$0 \qquad\qquad \frac{1}{2} \qquad\qquad 1$$

(1)

Ishani has six cards each with a number on it.
Four of these numbers are shown below.

When she picks at random one of the six cards, the probability that she picks a card with an even number on it is $\frac{1}{2}$

(c) Write a number on each of the blank cards to show one possible set of six cards that Ishani could have.

$$\boxed{3} \quad \boxed{3} \quad \boxed{5} \quad \boxed{6} \quad \boxed{} \quad \boxed{}$$

(1)

(Total for Question 2 is 3 marks)

3 The diagram shows a 6-sided polygon.
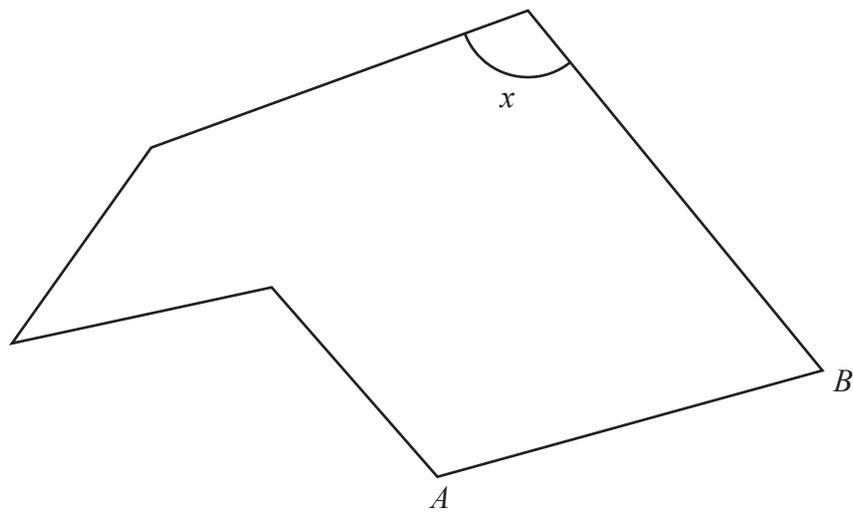
(a) Measure the length of the side *AB*
    Give the units of your answer.

    ....
    (2)

(b) Measure the size of the angle marked *x*

    °
    ....
    (1)

(c) Write down the mathematical name of a 6-sided polygon.

    ....
    (1)

(Total for Question 3 is 4 marks)

4 (a) Write $\dfrac{9}{10}$ as a decimal.

....

(1)

(b) Write $\dfrac{3}{50}$ as a percentage.

....%

(1)

Here is a shape made of squares.
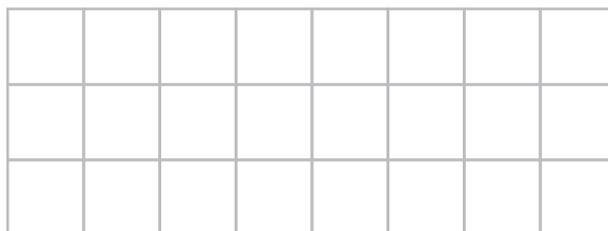
(c) Shade $\dfrac{5}{8}$ of the shape.

(1)

(d) One of these fractions is **not** equivalent to $\dfrac{2}{5}$

Which one?

$$\dfrac{20}{50} \qquad \dfrac{4}{10} \qquad \dfrac{2}{500} \qquad \dfrac{10}{25} \qquad \dfrac{60}{150}$$

....

(1)

There are 32 students in a class.
8 of the students study French.

(e) What fraction of the students do **not** study French?
Give your fraction in its simplest form.

....

(2)

(Total for Question 4 is 6 marks)

5 (a) Simplify $4e \times 7f$

....

(1)

(b) Simplify $d \times d \times d \times d \times d$

....

(1)

(c) Simplify $3a + 2k + a - 7k$

....

(2)

(d) Solve $x + 6 = 15$

$x =$ ....

(1)

(e) Solve $2r - 9 = 14$

$r =$ ....

(2)

(Total for Question 5 is 7 marks)

6 Aabir has some boxes and some crates.
Each box has the same weight.
Each crate has the same weight.

The total weight of 7 boxes and 2 crates is 27.3 kg
The total weight of 4 boxes and 2 crates is 16.8 kg

Work out the weight of one crate.

.... kg

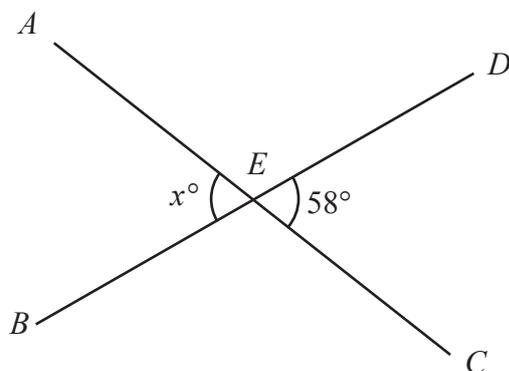**(Total for Question 6 is 4 marks)**

7

Diagram **NOT**
accurately drawn

AEC and *BED* are straight lines.

Sergio says that the value of *x* is 58

(a) Give a reason why Sergio is correct.

....

....

(1)

In the diagram, *GHIJ* is a quadrilateral.

Diagram **NOT** accurately drawn
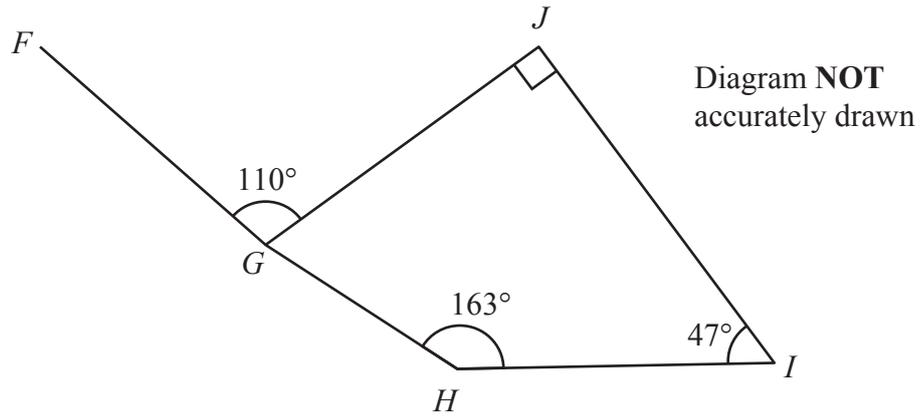
Chloe says *"FGH is a straight line"*

(b) Show that Chloe is wrong.
 Give a reason for each stage of your working.

(4)

(Total for Question 7 is 5 marks)

8 The pictogram shows information about the number of toys sold in a shop on each of five days.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

The number of toys sold on Friday was 16 more than the number of toys sold on Thursday.

Work out the number of toys sold on Monday.

....

(Total for Question 8 is 3 marks)

9 Here are the first four terms of a number sequence.

$$5 \qquad 12 \qquad 19 \qquad 26$$

(i) Write down the next term of the sequence.

....

(1)

(ii) Explain how you worked out your answer.

....

(1)

(Total for Question 9 is 2 marks)

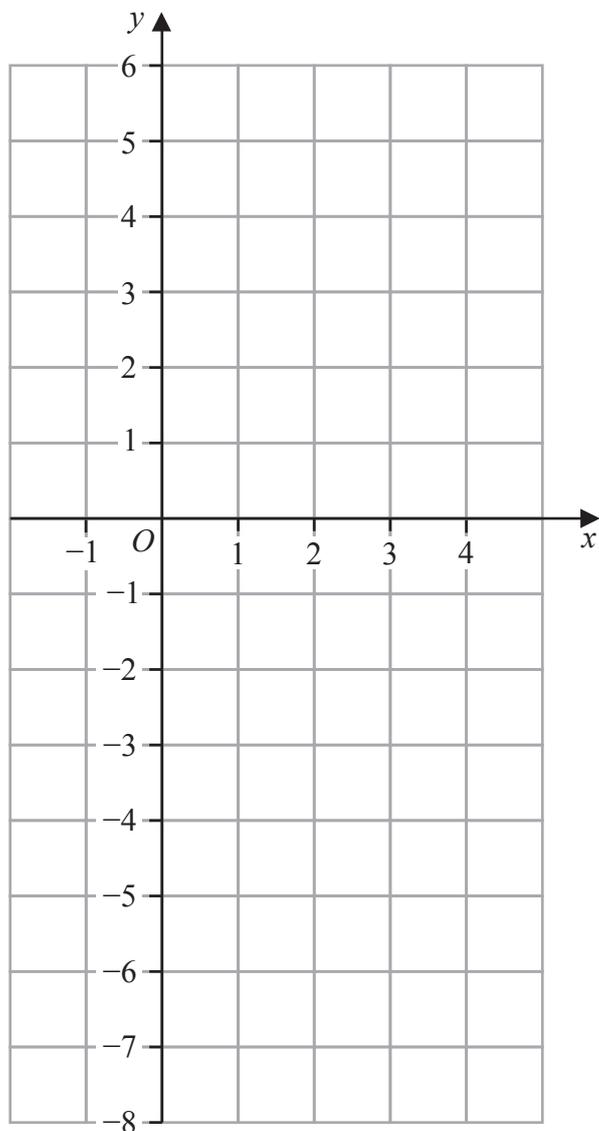**10** The table shows information about the number of cars sold by a garage in each of 30 weeks.

Number of cars sold	Frequency
1	4
2	10
3	5
4	7
5	4

Work out the mean number of cars sold per week.

....

(Total for Question 10 is 3 marks)

11 On the grid, draw the graph of $y = 2x - 5$ for values of x from -1 to 4

(Total for Question 11 is 3 marks)

12 A shop accepts payment in pounds (£) or in Swiss francs.

In the shop, a shirt costs £35 or 42 Swiss francs.
The cost of a jacket is £54

Alex works out the cost of the jacket in Swiss francs.
She uses the same exchange rate that was used for the cost of the shirt.

What is the cost of the jacket in Swiss francs?

.... Swiss francs

(Total for Question 12 is 3 marks)

13 A circle has radius 6.4 cm

Work out the area of the circle.
Give your answer correct to 3 significant figures.

.... cm^2

(Total for Question 13 is 2 marks)

14 The diagram shows a plan of a garden made from three identical rectangles.

3.5 m

Diagram **NOT** accurately drawn

6 m
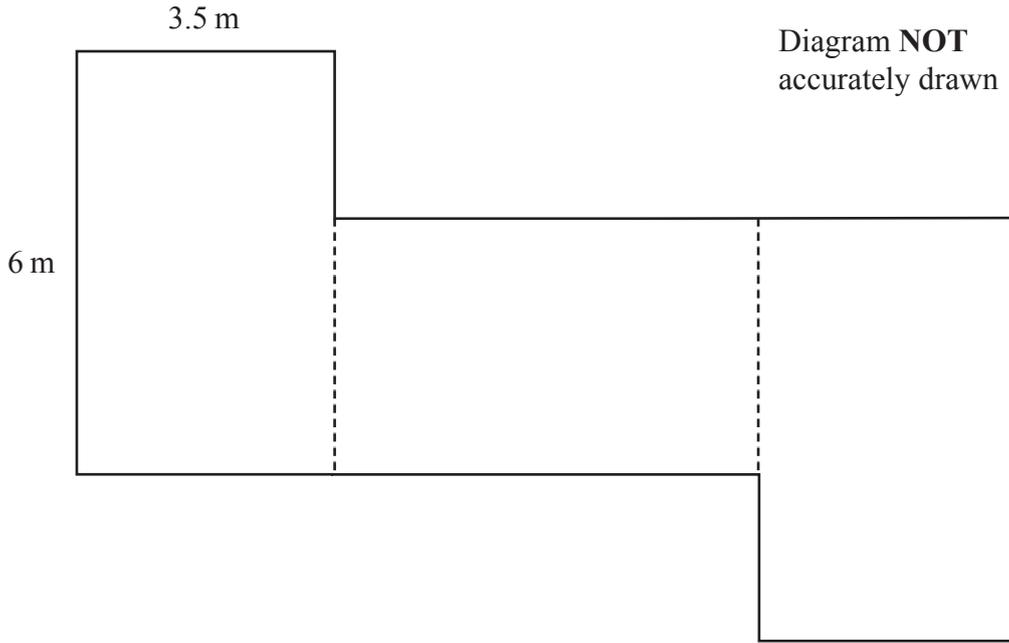
The length of each rectangle is 6 metres.
The width of each rectangle is 3.5 metres.

Jeremy puts a fence around the perimeter of the garden.
He charges 7.60 euros for each 1 metre of fence.

Work out how much Jeremy charges in total for the fence.

.... euros

(Total for Question 14 is 4 marks)

15 Jill scored 119 out of 140 marks in an exam.

Work out Jill's score as a percentage.

......................................%

(Total for Question 15 is 2 marks)

16 Find the lowest common multiple (LCM) of 45 and 70

....

(Total for Question 16 is 2 marks)

P 7 5 6 5 9 A 0 1 5 2 4

17 The length of a ship is 142.8 m, correct to 1 decimal place.

(i) Write down the lower bound of the length of the ship.

.... m

(1)

(ii) Write down the upper bound of the length of the ship.

.... m
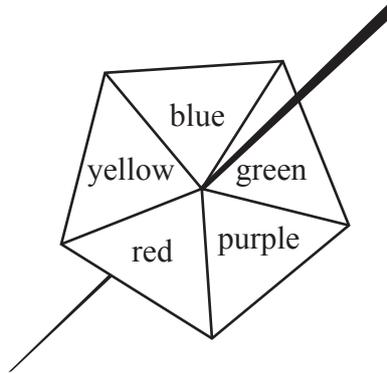
(1)

(Total for Question 17 is 2 marks)

18 Show that $2\dfrac{1}{4} \times 1\dfrac{5}{7} = 3\dfrac{6}{7}$

(Total for Question 18 is 3 marks)

19 Here is a biased 5-sided spinner.
When the spinner is spun, it can land on blue or on green or on purple or on red or
on yellow.

The table gives information about the probability of the spinner landing on each colour.

Colour	blue	green	purple	red	yellow
Probability	0.12	0.20	0.38	$4x$	x

Sophie spins the spinner once.

(a) Work out the probability that the spinner lands on blue or on green or on purple.

....

(1)

Max spins the spinner 350 times.

(b) Work out an estimate for the number of times the spinner lands on red.

....

(4)

(Total for Question 19 is 5 marks)

20 $\mathcal{E} = \{1,\ 2,\ 3,\ 4,\ 5,\ 6,\ 7,\ 8,\ 9,\ 10,\ 11,\ 12\}$

$A = \{2,\ 4,\ 6,\ 8,\ 10,\ 12\}$

$B = \{3,\ 6,\ 9,\ 12\}$

$C = \{1,\ 3,\ 5,\ 7,\ 9,\ 11\}$

(a) List the members of the set

   (i) $A \cup B$

....

   (ii) B'

....

(2)

$\mathcal{E} = \{1,\ 2,\ 3,\ 4,\ 5,\ 6,\ 7,\ 8,\ 9,\ 10,\ 11,\ 12\}$

$A = \{2,\ 4,\ 6,\ 8,\ 10,\ 12\}$

$B = \{3,\ 6,\ 9,\ 12\}$

$C = \{1,\ 3,\ 5,\ 7,\ 9,\ 11\}$

$\mathcal{E}$	$\cap$	$\cup$	$\varnothing$	$\in$	$\notin$

(b) Write a symbol from the box on each dotted line to make each of the following a true statement.

   (i) $A \cap C = $ ....

   (ii) 13 .... $\mathcal{E}$

(2)

(Total for Question 20 is 4 marks)

21
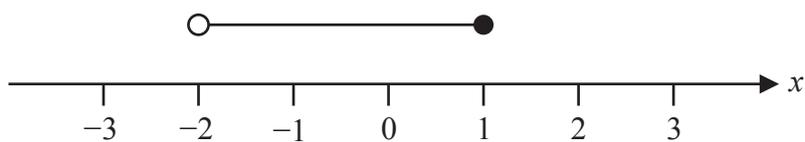
(a) Write down the inequality shown on the number line.

....

(2)

(b) Solve the inequality $7a - 5 \leqslant 3a + 28$

Show clear algebraic working.

....

(2)

(Total for Question 21 is 4 marks)

22 A bus travels a distance of 1262 km from Beijing to Shanghai.

The bus takes $17\frac{1}{2}$ hours.

(a) Work out the average speed of the bus.
Give your answer, in km/h, correct to the nearest whole number.

.... km/h

(2)

(b) Change a speed of 50x metres per second to a speed in kilometres per hour.

.... km/h

(3)

(Total for Question 22 is 5 marks)

23 (a) Expand $x(x - 3)$

....

(1)

(b) Make t the subject of $m = \dfrac{t + 4}{5}$

....

(2)

(c) Simplify $a^6 \times a^{10}$

....

(1)

(d) Simplify $c^{30} \div c^{12}$

....

(1)

(e) (i) Factorise $y^2 - 10y + 21$

....

(2)

(ii) Hence, solve $y^2 - 10y + 21 = 0$

....

(1)

(Total for Question 23 is 8 marks)

24 The diagram shows triangle *PQR*
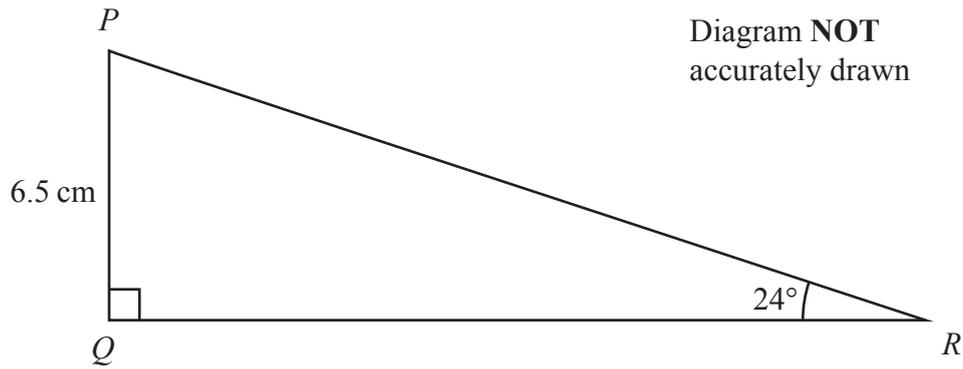
Work out the length of *QR*
Give your answer correct to 3 significant figures.

.... cm

(Total for Question 24 is 3 marks)

25 The diagram shows two water containers.
One is a cuboid and one is a cylinder.

Diagram **NOT**
accurately drawn

10 cm

33 cm

20 cm

9 cm
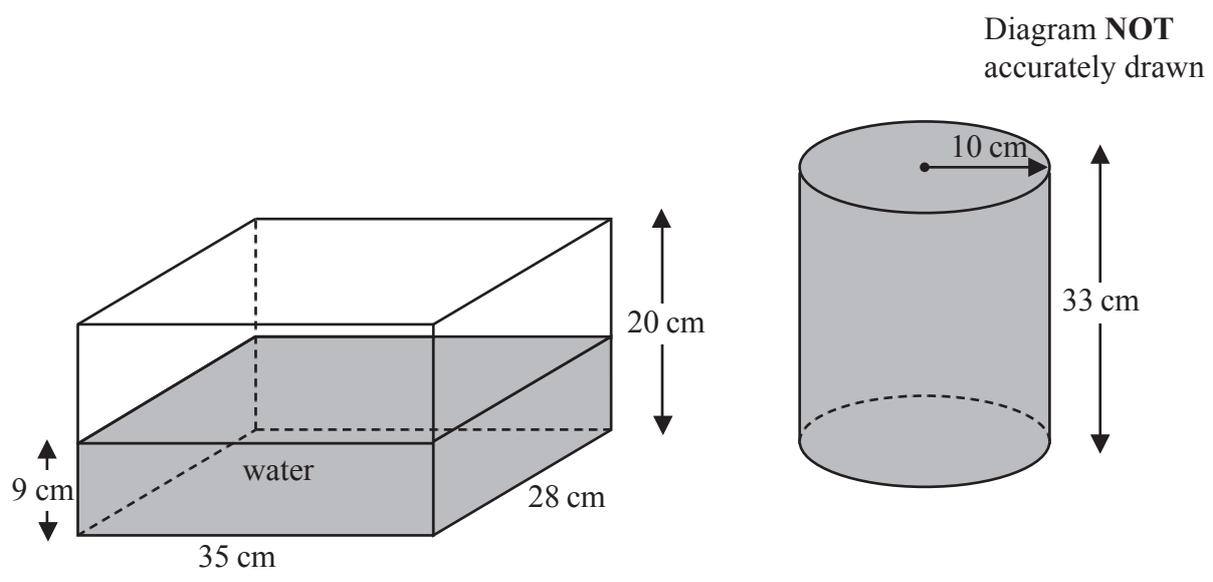
water

28 cm

35 cm

The cuboid measures 35 cm by 28 cm by 20 cm
The surface of the water in the cuboid is 9 cm above the base of the cuboid.

The cylinder has a radius of 10 cm and a height of 33 cm
The cylinder is completely full of water.

Izzy is going to pour all the water from the cylinder into the cuboid.

Show that the cuboid will not be completely full of water.

(Total for Question 25 is 3 marks)

26 Zhou invests some money for 2 years.
He invests $2500 with Bank A and $3000 with Bank B.

Bank A

Invests $2500

$\dfrac{\text{amount of money invested}}{\quad}$: total amount of interest after 2 years $= \ 20 : 3$

Bank B

Invests $3000

4% per year compound interest for 2 years

Zhou receives more **interest** from Bank A than from Bank B.

How much more?

$ ....

(Total for Question 26 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS