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.
- Good luck with your examination.
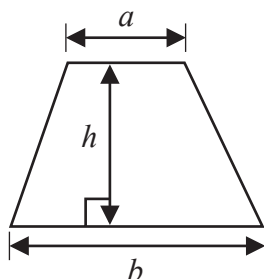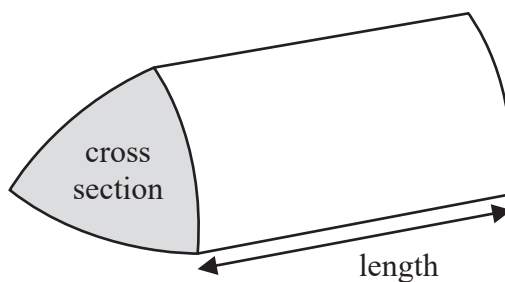
Turn over ▶

International GCSE Mathematics

Formulae sheet – Foundation Tier

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

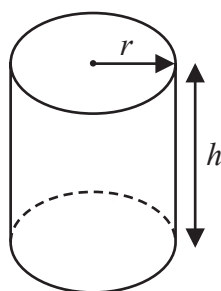**Volume of prism** = area of cross section × length

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

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

P65917RA0224
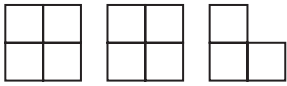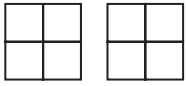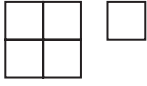
Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The pictogram shows information about the number of ice creams Sandeep sold on each of four days last week.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key:

represents
20 ice creams

(a) How many ice creams did Sandeep sell on Thursday?

....
(1)

Sandeep sold 30 ice creams on Friday.

(b) Complete the pictogram to show the number of ice creams Sandeep sold on Friday.

(1)

(c) On which day was the least number of ice creams sold?

....
(1)

(d) Work out the total number of ice creams Sandeep sold last week.

....
(2)

(Total for Question 1 is 5 marks)

2 (a) Write these numbers in order of size.
Start with the smallest number.

2.12   2.19   2.07   2.1   2.001

....
(1)

(b) Write down the value of 6 in the number 54.623

....
(1)

(c) Write the number 3.4896 correct to 2 decimal places.

....
(1)

(d) Write 0.6 as a percentage.

....%
(1)

(Total for Question 2 is 4 marks)

3 (a) Simplify $4x + 5x - 2x$

....
(1)

(b) Simplify $4p \times 7$

....
(1)

(Total for Question 3 is 2 marks)

4 (a) Change 5.48 metres into centimetres.

.... cm

(1)

(b) Change 4600 millilitres into litres.

.... litres

(1)

Here is an isosceles triangle *ABC*.
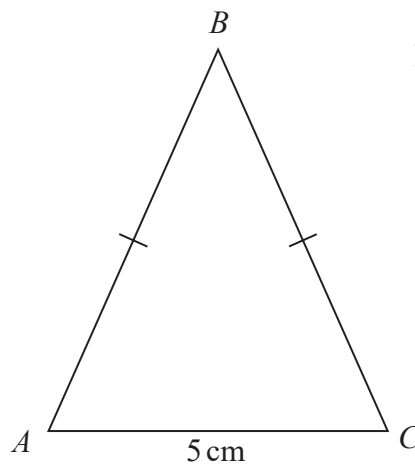

Diagram **NOT**
accurately drawn

AC = 5 cm.

The perimeter of the triangle is 32 cm.

(c) Work out the length of *AB*.

.... cm

(2)

(Total for Question 4 is 4 marks)

5 Adisha plays basketball for her school.

Here is the number of points that she scored in each of nine games.

15 16 15 18 17 15 13 19 18

(a) Find the mode of the numbers of points that Adisha scored.

....

(1)

(b) Work out the range of the numbers of points that Adisha scored.

....

(2)

(Total for Question 5 is 3 marks)

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

4 8 12 16

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

....

(1)

(b) Explain how you found your answer to part (a).

....

(1)

(c) Find an expression, in terms of *n*, for the *n*th term of the sequence.

....

(1)

(Total for Question 6 is 3 marks)

7 Carmel is working out the cost of using her mobile phone in March.

Here is the information that she uses.

Calls	465 minutes	(first 400 minutes free)
Texts	1740 messages	(first 1500 messages free)

Costs

Monthly charge	$20.75
Calls	$0.10 per minute
Texts	$0.05 each message

Work out the total cost that Carmel has to pay for using her mobile phone in March.

$...

(Total for Question 7 is 4 marks)

8 Here is a rhombus.

122°

$x°$
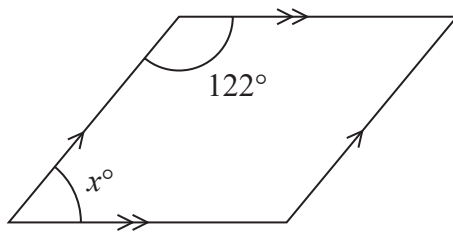
Diagram **NOT** accurately drawn

Work out the value of x.
Give a reason for your answer.

$x =$ ....

(Total for Question 8 is 3 marks)

9 The diagram shows a cuboid.

9 cm

6 cm

12 cm
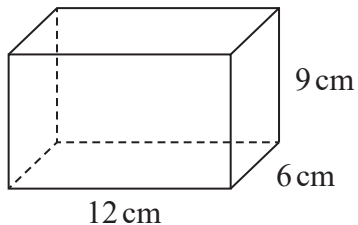
Diagram **NOT** accurately drawn

Work out the volume of the cuboid.

.... cm³

(Total for Question 9 is 2 marks)

10 (a) Write 25 as a fraction of 145
   Give your fraction in its simplest form.

....
   (2)

(b) Work out 9 as a percentage of 25

....%
   (2)

The cost of 16 sandwiches of the same type is 28 euros.

(c) Work out the cost of 27 of these sandwiches.

.... euros
   (2)

(Total for Question 10 is 6 marks)

11 *ABC* is a triangle.

$$AB = 9\,\text{cm}, \quad AC = 5\,\text{cm} \text{ and } BC = 8\,\text{cm}.$$

Use ruler and compasses to construct triangle *ABC* with *AB* as its base.
You must show all construction lines.
The line *AB* has been drawn for you.

A ———————————————————————————— *B*

(Total for Question 11 is 2 marks)

12 $T = 6p - 4d$

(a) Work out the value of T when $p = 8$ and $d = 3$

$T = $ ....
(2)

$T = 6p - 4d$

(b) Work out the value of p when $T = -41$ and $d = 5$

$p = $ ....
(3)

(c) Solve $4(x - 3) = 7x + 15$

Show clear algebraic working.

$x = $ ....
(3)

(Total for Question 12 is 8 marks)

13 Trains leave Agra station to go to New Delhi every 40 minutes.
Trains leave Agra station to go to Mumbai every 48 minutes.

At 6 am a train leaves Agra station to go to New Delhi and at the same time a train leaves Agra station to go to Mumbai.

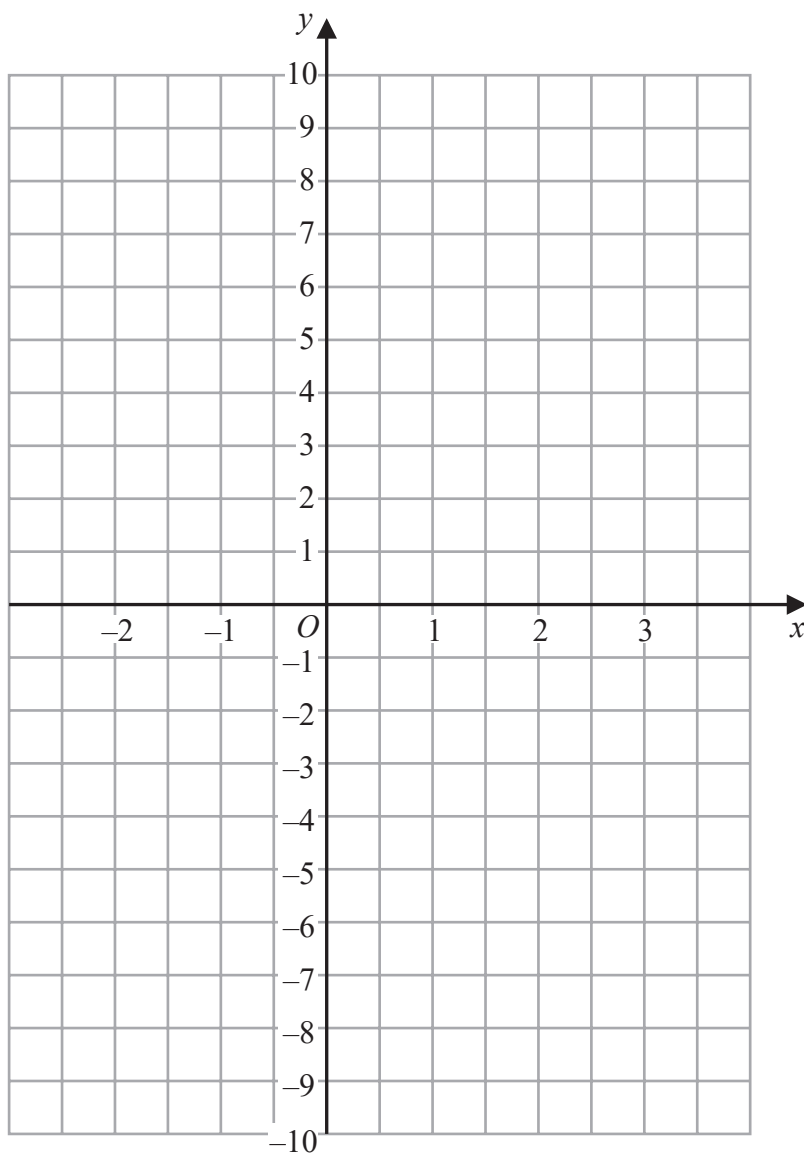Work out the next time a train leaves Agra station to go to New Delhi and at the same time a train leaves Agra station to go to Mumbai.

....

(Total for Question 13 is 3 marks)

14 On the grid below, draw the graph of $y = 1 - 3x$ for values of x from -2 to 3
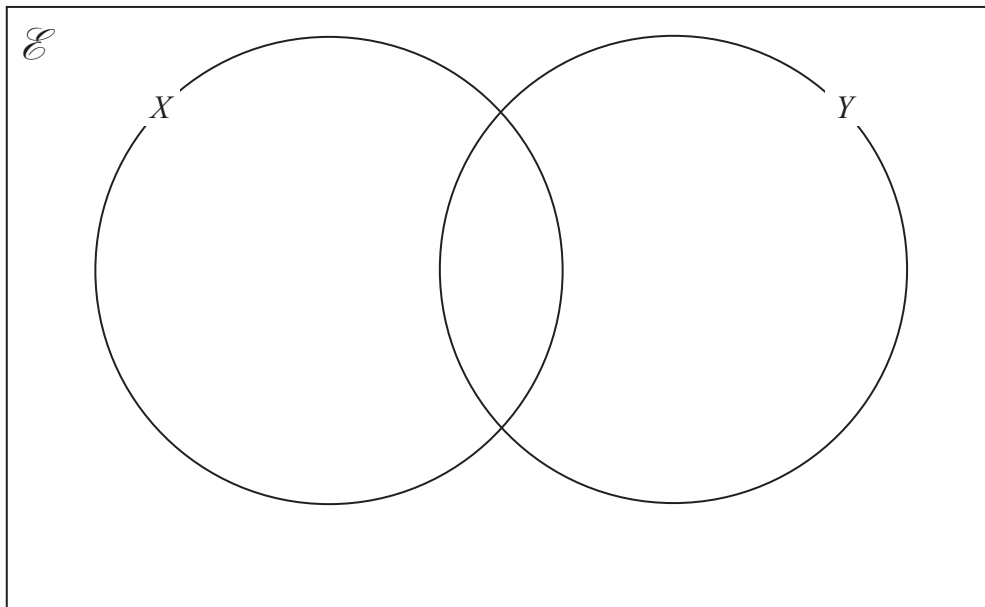
(Total for Question 14 is 3 marks)

Turn over ▶

15 $\mathscr{E} = \{2, 4, 6, 8, 10, 12, 14, 16, 18\}$
  $X = \{4, 8, 12, 16\}$
  $Y = \{6, 12, 18\}$

(a) Complete the Venn diagram for this information.

(3)

A number is chosen at random from $\mathscr{E}$

(b) Find the probability that the number is in the set $X \cup Y$

....

(2)

(Total for Question 15 is 5 marks)

16 Ravina leaves her home at 1 35 pm in her car.

Ravina drives 60 km from her home to get to an appointment.
She drives at an average speed of 80 km/h.

At what time does Ravina get to her appointment?

....

(Total for Question 16 is 3 marks)

17 (a) Write down the value of m, given that $3^4 \times 3^5 = 3^m$

$m = $ ....
(1)

(b) Write down the value of n, given that $(5^3)^7 = 5^n$

$n = $ ....
(1)

(c) Find the value of p, given that $\dfrac{7^8 \times 7^2}{7^p} = 7^6$

$p = $ ....
(2)

(Total for Question 17 is 4 marks)

18 Here are two rectangles, rectangle *A* and rectangle *B*.

rectangle *A* **rectangle *B*** Diagram **NOT** accurately drawn

$(5 - x)$ cm

4 cm

$(2x - 1)$ cm

5 cm
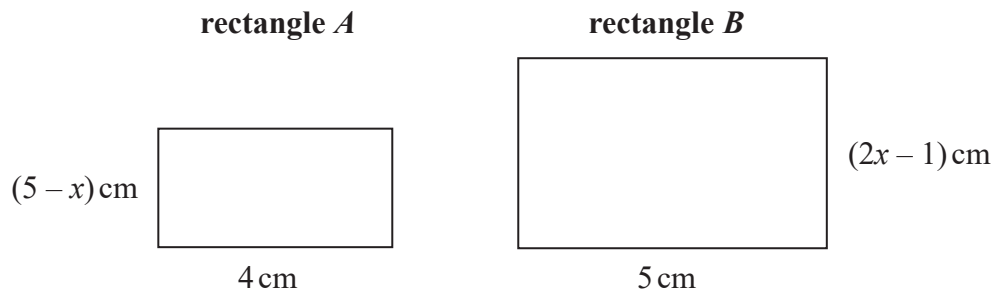
The area of rectangle *B* is twice the area of rectangle *A*.

Work out the value of *x*.
Show your working clearly.

$x = $ ....

(Total for Question 18 is 4 marks)

19 The table gives information about the amounts of money, in euros, that 70 of Anjali's friends spent last Saturday.

Money spent (*S* euros)	Frequency
$0 < S \leqslant 8$	6
$8 < S \leqslant 16$	14
$16 < S \leqslant 24$	19
$24 < S \leqslant 32$	25
$32 < S \leqslant 40$	6

One of Anjali's 70 friends is going to be chosen at random.

(a) Find the probability that this friend spent more than 24 euros last Saturday.

....

(1)

(b) Work out an estimate for the mean amount of money spent by Anjali's friends last Saturday.
   Give your answer correct to 2 decimal places.

.... euros

(4)

(Total for Question 19 is 5 marks)

Turn over ▶

20 *ABC* and *DEF* are similar triangles.
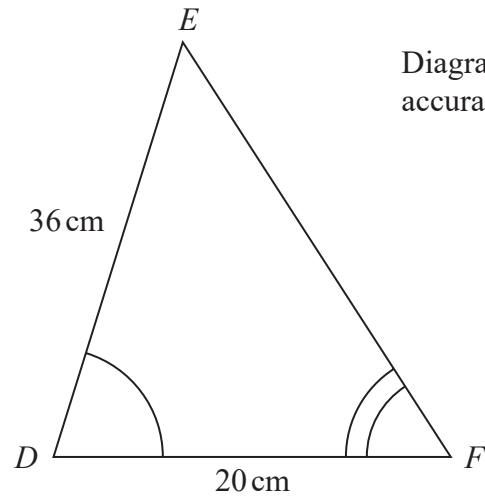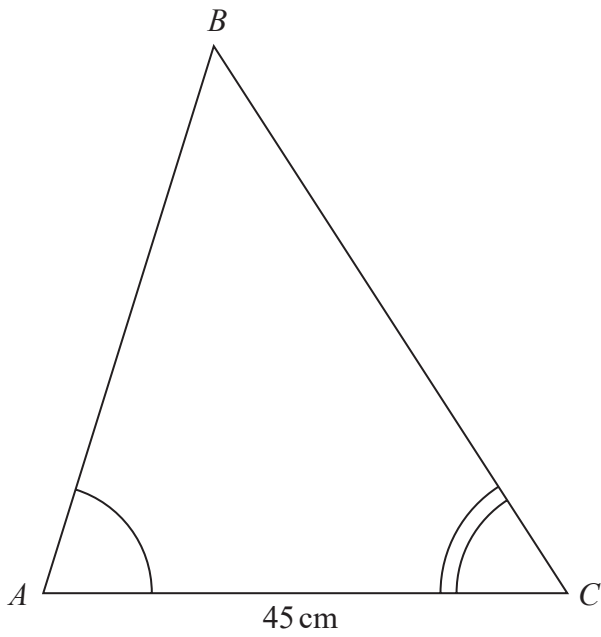
Diagram **NOT** accurately drawn

(a) Work out the length of *AB*.

.... cm

(2)

Given that *BC* = 54 cm,

(b) work out the length of *EF*.

.... cm

(2)

(Total for Question 20 is 4 marks)

21 The diagram shows a regular octagon *ABCDHIJK* and a pentagon *DEFGH*.

Diagram **NOT**
accurately drawn

C

B

E

D

102°

112°

96° *F*

A

H

x

G

K

I

J
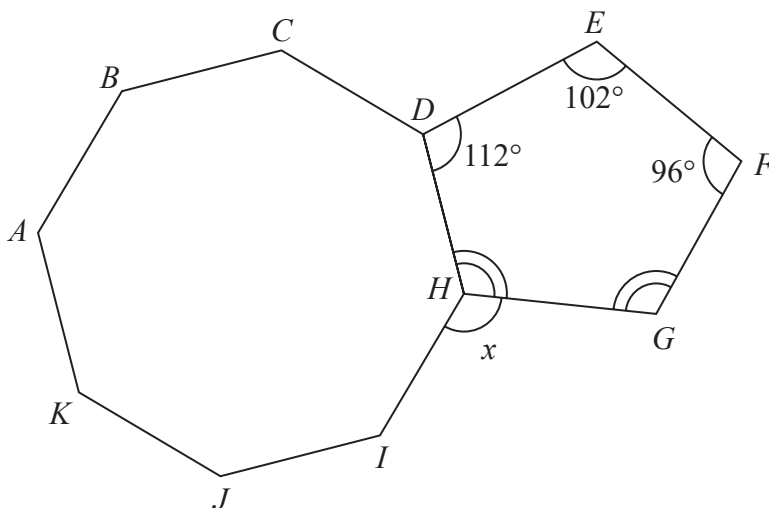
Angle *GHD* = angle *FGH*.

Work out the size of the angle marked *x*.
Show your working clearly.

.... °

(Total for Question 21 is 5 marks)

22 Victor buys 12 bottles of apple juice for a total cost of $21
Victor sells all 12 bottles at $2.45 each bottle.

Work out Victor's percentage profit.

....%

(Total for Question 22 is 3 marks)

23 Ali and Badia each have 25 000 dollars to invest.

Cyclone Bank	Tornado Bank
Invest 25 000 dollars 4.5% compound interest per year for 3 years	Invest 25 000 dollars Receive 1150 dollars interest each year for 3 years

Ali invests in the Cyclone Bank for 3 years.
Badia invests in the Tornado Bank for 3 years.

By the end of the 3 years, Ali will have received more interest than Badia.

How much more?
Show your working clearly.
Give your answer correct to the nearest dollar.

.... dollars

(Total for Question 23 is 4 marks)

Turn over ▶

24 (a) Simplify $(3x^2y)^0$

....
(1)

(b) (i) Factorise $x^2 - 5x - 36$

....
(2)

(ii) Hence solve $x^2 - 5x - 36 = 0$

....
(1)

(Total for Question 24 is 4 marks)

25 A rainwater tank contains 2.4×10^7 raindrops.
The rainwater tank also contains 1.75×10^6 bacteria.

Work out the number of bacteria per raindrop in the tank.
Give your answer in standard form correct to 2 significant figures.

....

(Total for Question 25 is 3 marks)

Turn over for Question 26

Turn over ▶

26 *ABC* is an isosceles triangle with *BA* = *BC*.
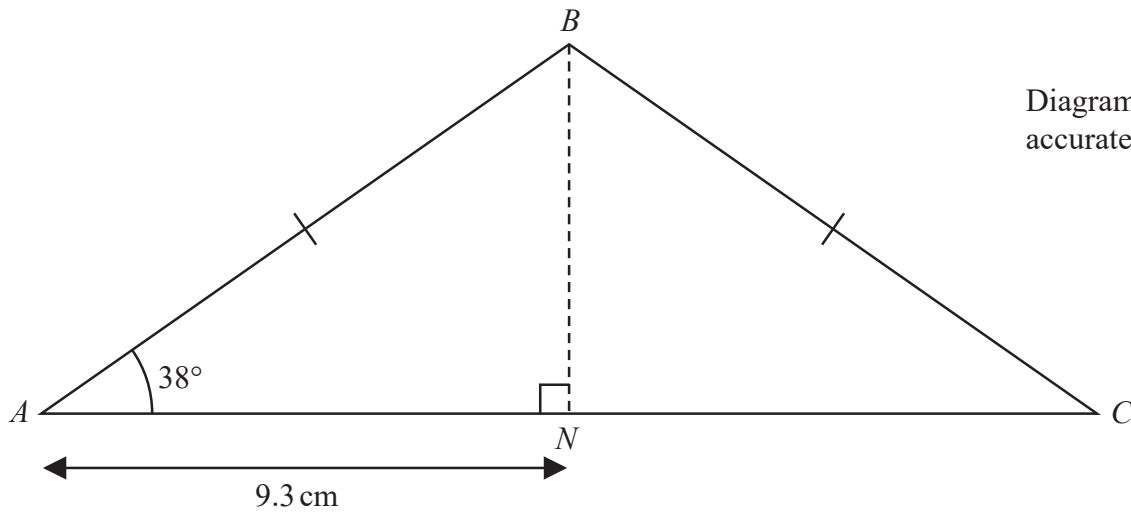
Diagram **NOT** accurately drawn

N is the point on *AC* such that *AN* = 9.3 cm and *BN* is perpendicular to *AC*.

Work out the perimeter of triangle *ABC*.
Give your answer correct to 3 significant figures.

.... cm

(Total for Question 26 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS