Write your name here

Surname		Other names

Edexcel GCSE

Centre Number

Candidate Number

Applications of Mathematics
Unit 2: Applications 2

Foundation Tier

Practise paper
Time: 1 hour 45 minutes

Paper Reference
5AM2F/01

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.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

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.*
- Questions labelled with an **asterisk** (*****) are ones where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
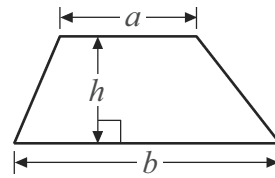- Check your answers if you have time at the end.

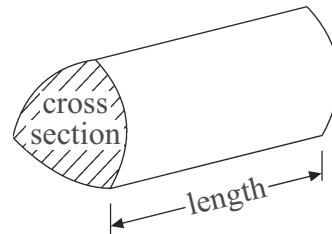*Turn over* ▶

GCSE Mathematics 2AM01

Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

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

Volume of prism = area of cross section × length

Answer ALL questions

Write all your answers in the spaces provided.

You must write down all stages in your working.

1 There are 24 670 people at a football match.

(a) Write down the value of the **4** in the number 24 670

....

(1)

A piece of wood measures 6.35 metres.

(b) Write down the value of the **5** in the number 6.35

....

(1)

(Total for Question 1 is 2 marks)

2 Amjit buys

2 pencils at 74p each
1 pencil case at £2.67
1 pen at £1.98

He pays with a £10 note.
Work out how much change he should get.

£ ....

(Total for Question 2 is 3 marks)

3 Sarah is 1.67 metres tall.

(a) Write 1.67 metres in centimetres.

.... centimetres

(1)

A bottle contains 1500 m*l* of water.

(b) Write 1500 m*l* in litres.

.... litres

(1)

Ben's hand is 198 mm long.
Lucy's hand is 19 cm long.

Ben's hand is longer than Lucy's hand.

(c) How much longer?

....

(3)

(Total for Question 3 is 5 marks)

4 The diagram shows a badge printed on a centimetre square grid.
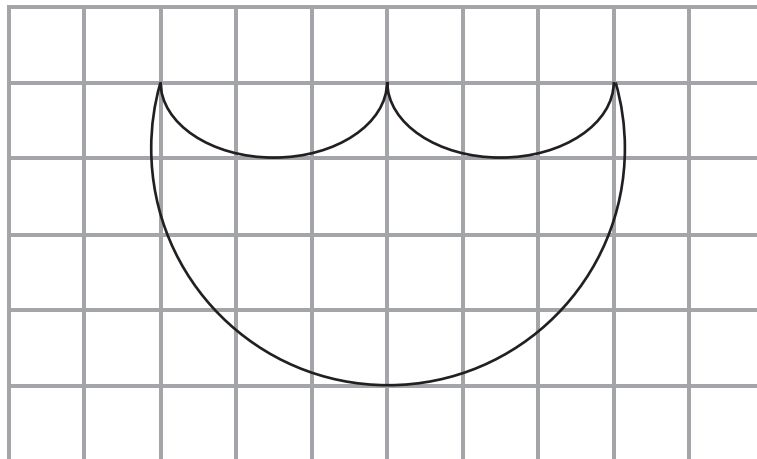
Estimate the area, in cm², of the badge.

.... cm²

(Total for Question 4 is 2 marks)

5 The diagram shows four checkpoints A, B, C and D on a 12 km charity walk.

3.7 km	2.9 km	....

A —————— B —————— C —————— D

←————————————— 12 km —————————————→
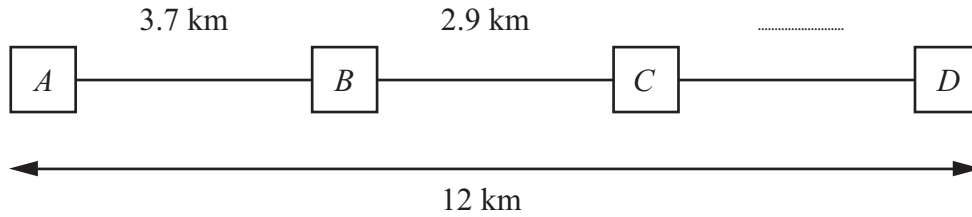
$AB = 3.7$ km.
$BC = 2.9$ km.

(a) Work out the distance between checkpoint C and checkpoint D.

.... km

(2)

172 people took part in the charity walk.
They each paid an entry fee of £6.50
The organisers bought 200 bottles of water.
Each bottle of water cost 35p.

After paying for the water, all the money remaining from the entry fees is given to charity.

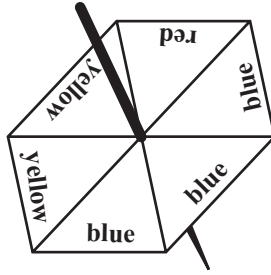The organisers hoped to give more than £1000 to charity.

*(b) Did the organisers give more than £1000 to charity?

(4)

(Total for Question 5 is 6 marks)

6

Here is a fair 6-sided spinner.
The spinner is used in a game.
Sam will spin the spinner once.
The spinner will land on one of the colours.

Draw a circle around the word to best describe the probability of each of the following events.

(a) The spinner will land on red.

(1)

| impossible | unlikely | even | likely | certain |

(b) The spinner will land on blue.

(1)

| impossible | unlikely | even | likely | certain |

(c) The spinner will land on green.

(1)

| impossible | unlikely | even | likely | certain |

(Total for Question 6 is 3 marks)

7 Bobby works at a cinema.
He works on Monday, Tuesday, Wednesday, Thursday and Friday.
He gets a bonus if he sells 500 or more tickets in a week.

The table shows how many tickets he sold on each of the first four days.

Day	Number of tickets sold
Monday	73
Tuesday	96
Wednesday	126
Thursday	87

What is the least number of tickets Bobby must sell on Friday if he is to get his bonus?

....

(Total for Question 7 is 3 marks)

8 The scale diagram shows the plan of a room.
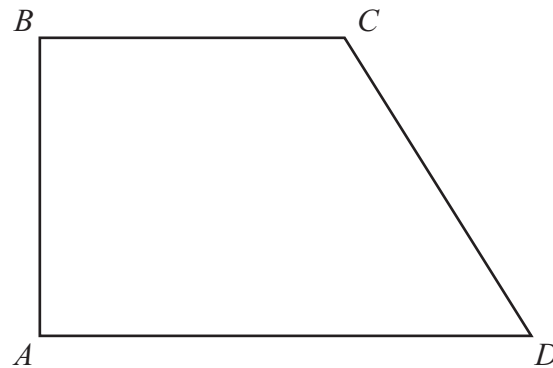
Scale : 1 cm represents 2 m

(a) On the diagram, mark with arrows (>>), a pair of parallel sides.

(1)

(b) Work out the real length of *AD*.

.... m

(2)

(Total for Question 8 is 3 marks)

9 Anne is cooking a turkey.
She uses this rule to work out the number of minutes it will take to cook the turkey.

Number of minutes = 40 × weight of turkey in kg + 30

The weight of the turkey is 5 kg.

(a) Work out how long, in minutes, it will take to cook the turkey.

.... minutes

(2)

Rob also wants to cook a turkey.
He uses the same rule to work out how long his turkey will take to cook.
His turkey will take 350 minutes to cook.
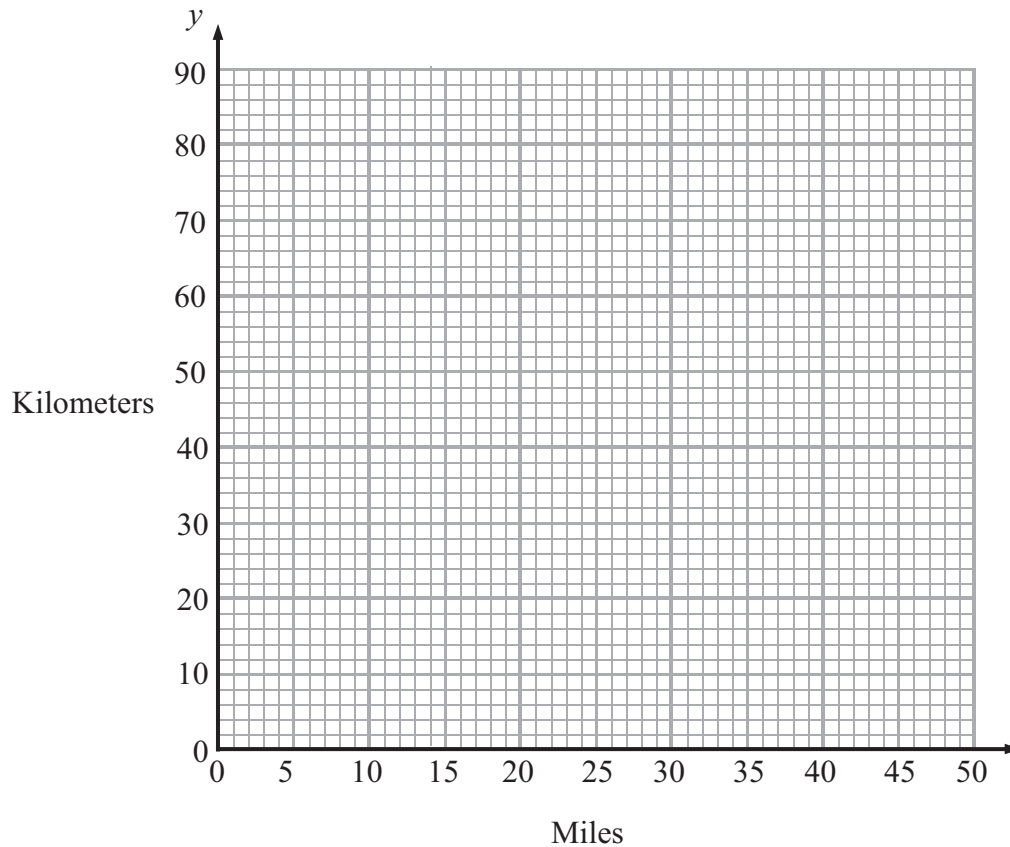
(b) Work out the weight of Rob's turkey.

....

(3)

(Total for Question 9 is 5 marks)

10 (a) Draw a conversion graph that can be used to change between miles and kilometres.

You may use the fact that 5 miles = 8 kilometres

(2)

Jane drives a distance of 60 kilometres.

(a) How many miles does Jane drive?

.... miles

(2)

The distance from London to Leeds is 175 miles.

(b) How far is it from London to Leeds in kilometres?

.... kilometres

(2)

(Total for Question 10 is 6 marks)

Turn over ▶

*11 Mrs Jones is taking her family to an aquarium.

> **Ticket prices (per person)**
>
> Adult   £18.50
> Child (3 – 16)   £14.50
> Child (under 3)   free

Mrs Jones wants to get tickets for two adults and three children.
The ages of the children are 2, 4 and 7.

Mrs Jones wants to pay in cash.
The only cash that she has is four £20 notes.

Has Mrs Jones enough cash to buy the tickets?
You must show all your working

(Total for Question 11 is 4 marks)

12 Katie has a bag of 18 sweets.

8 of the sweets are strawberry flavour,
7 of the sweets are lemon flavour,
3 of the sweets are orange flavour.

Katie takes at random a sweet from the bag.

Write down the probability that Katie

(a) takes a lemon flavour sweet,

....

(b) does **not** take an orange flavour sweet,

....

(c) takes a raspberry flavour sweet.

....
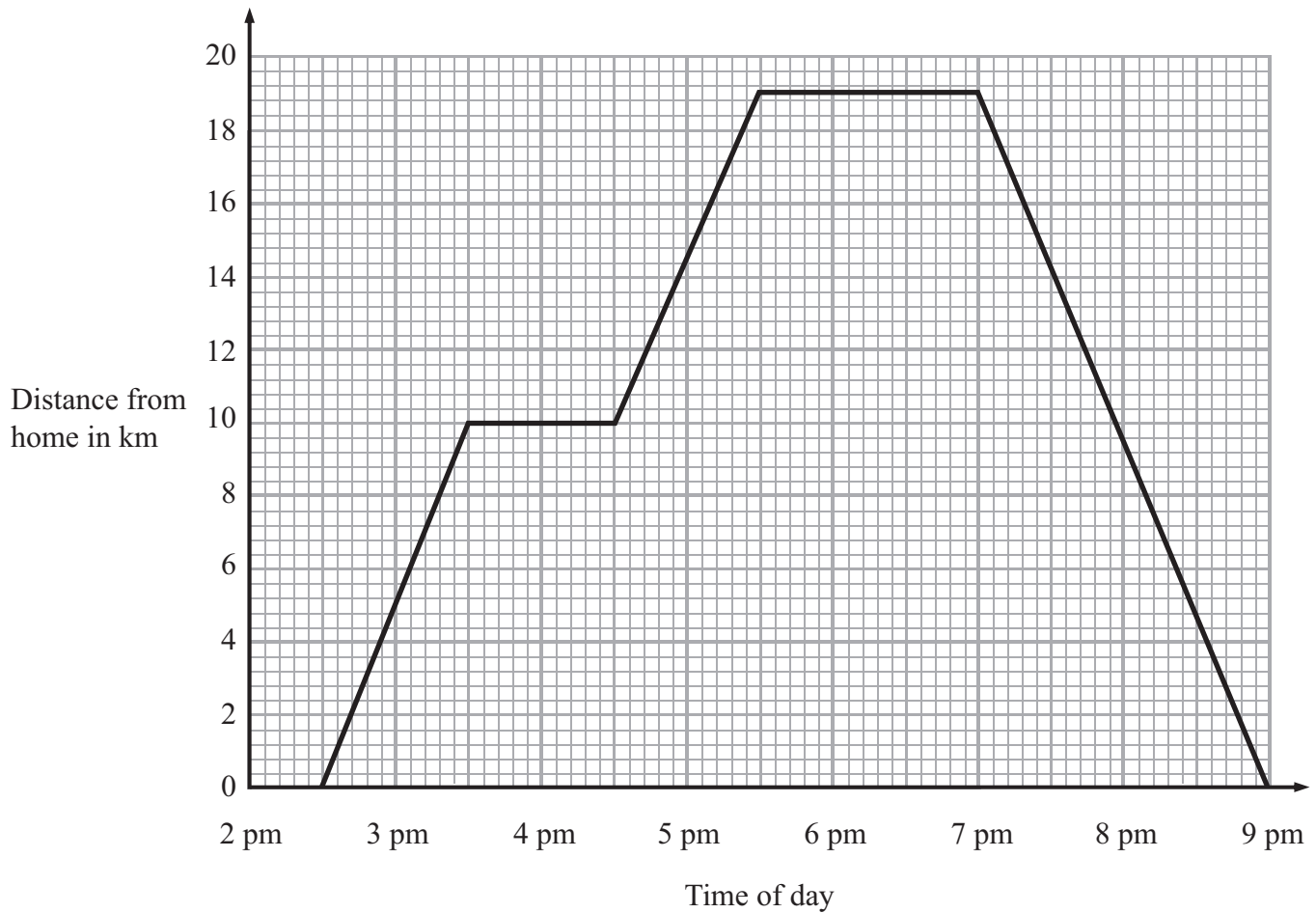
(Total for Question 12 is 3 marks)

13 Kunal visited a friend and then returned home.

The travel graph shows some information about Kunal's journey.

Distance from home in km

(a) Write down the time that Kunal started his journey.

....

(1)

At 3:30 pm, Kunal stopped at a café.

(b) (i) Find his distance from home when he stopped at the café.

.... km

(ii) For how many minutes did he stop?

.... minutes

(2)

Kunal stayed with his friend for $1\frac{1}{2}$ hours.

He then returned home.

(c) Work out the total distance travelled by Kunal.

.... km

(2)

(Total for Question 13 is 5 marks)

14 Jenny has a monthly pay plan for her mobile phone.
Each month, she pays a total of £8.95 plus the cost of any extra minutes and any extra texts.

> **Monthly pay plan**
> For **£8.95** per month you get:
>
> 120 minutes and 1000 texts
>
> Extra minutes : 16.5p for each minute
> Extra texts: 10p for each text

Last month, Jenny used 138 minutes and sent 1085 texts.

Work out how much she paid in total last month.

£ ....

(Total for Question 14 is 5 marks)

15 The formula $v = u + 4t$ can be used to work out the speed, v, of an object.
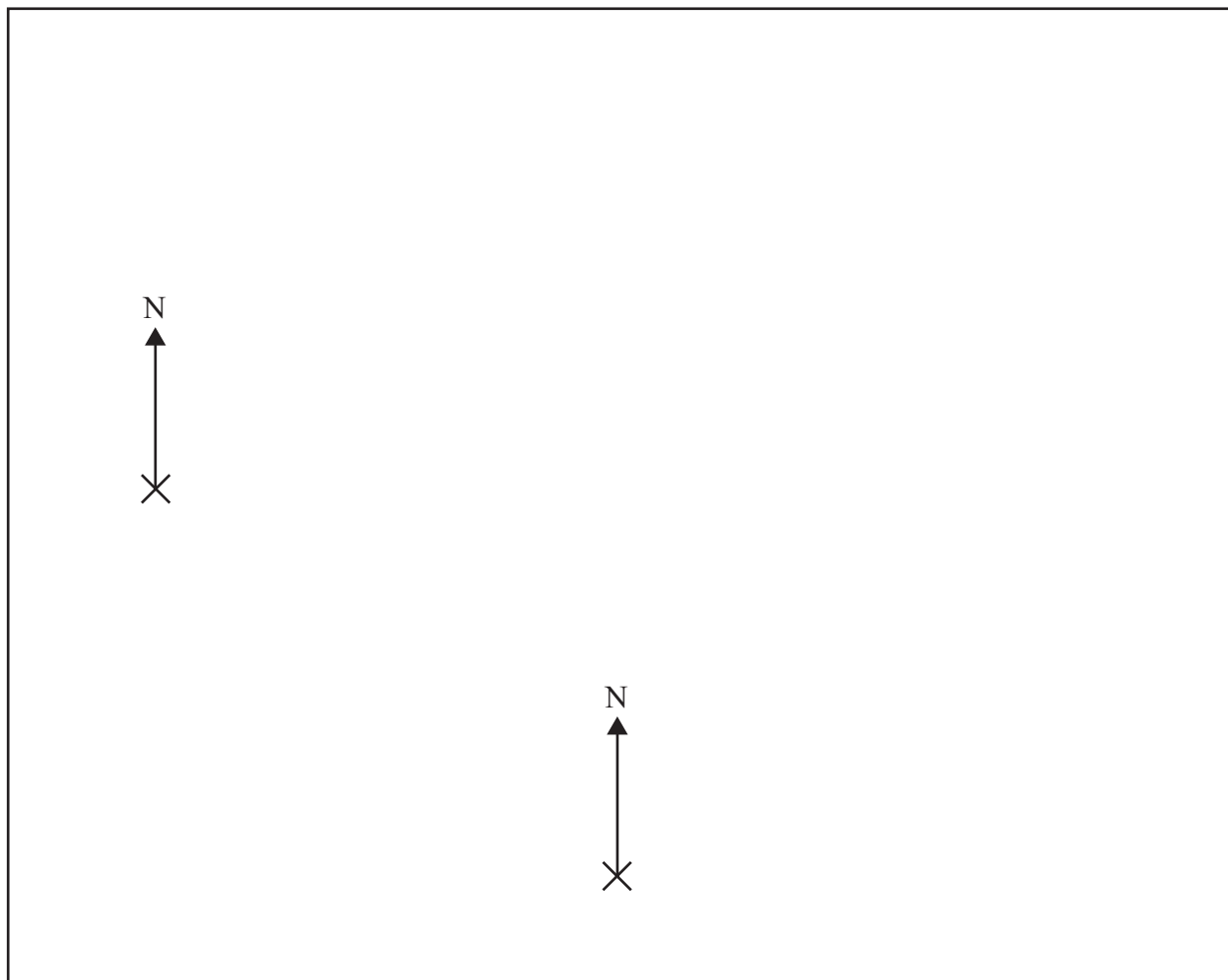
Work out the value of v when $u = -10$ and $t = 15$

....

(Total for Question 15 is 2 marks)

16 The diagram shows the positions of two towns, *A* and *B*.

N

N

Scale : 1 cm represents 40 km

(a) Find the bearing of town *B* from town *A*.

....

(1)

Town *C* is on a bearing of 050º from town *A*.
The actual distance between town *A* and town *C* is 260km.

(b) Mark with a cross (×) the position of town *C* on the diagram.
   Label the point *C*.

(2)

(Total for Question 16 is 3 marks)

Turn over ▶

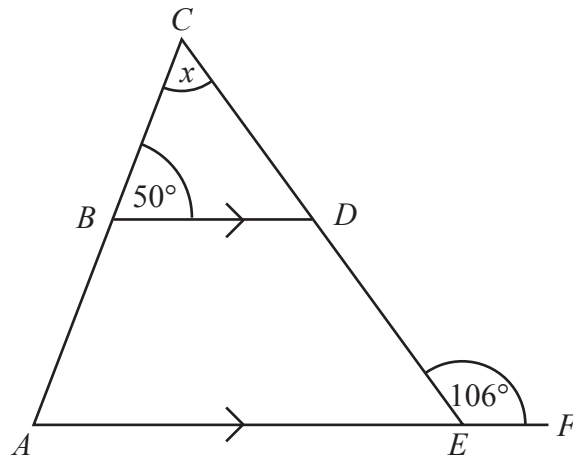***17** The diagram shows part of a climbing frame.

Diagram **NOT** accurately drawn

BD is parallel to *AEF*.

Work out the size of angle *x*.
You must give reasons for your working.

(Total for Question 17 is 4 marks)

W 4 1 0 5 8 A 0 1 4 2 2

18 Jetinda makes and sells small bars of soap.
She designs a box for a bar of soap.

The box is in the shape of a cuboid.

Diagram **NOT** accurately drawn

Each box is a cuboid with

length 5 cm
width 4 cm
height 3 cm

3 cm

4 cm
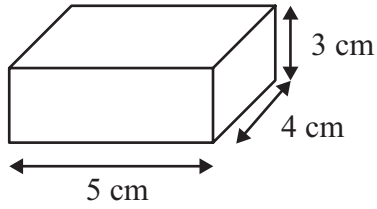
5 cm

(a) Draw an accurate net of this cuboid.

(3)

(b) Jetinda works for 6 hours a day.
She makes 15 bars of soap each hour.

She puts each bar of soap into a box.
She packs the boxes of soap into cartons.
Each carton contains 36 boxes of soap.

Jetinda has an order for 10 cartons of soap.

Work out the number of days Jetinda will have to work to make enough soap.

....

(4)

(Total for Question 18 is 7 marks)

19 (a) A train travelled at an average speed of 100 miles per hour.

Work out the distance that the train travelled in $2\frac{1}{4}$ hours.

.... miles

(2)

*(b) John and Simon went on holiday by plane.
The pilot said the speed of the plane was 400 kilometres per hour.

John told Simon that 400 kilometres per hour was about the same as 300 miles per hour.

Is John correct?
You must show your working.

(3)

(Total for Question 19 is 5 marks)

20 Each day patients in a hospital can have one of four meals for lunch.
The four meals are curry, chicken, pasta and salad.

The table shows the probability that a patient chosen at random from the patients who have meals will have curry or chicken or salad.

Snack	curry	chicken	pasta	salad
Probability	0.17	0.26		0.2

One patient is chosen at random from the patients who have meals.

(a) Work out the probability that the patient

(i) did **not** have salad,

....

(ii) had pasta.

....

(3)

200 patients had meals on Tuesday.

(b) Work out an estimate for the number of patients who had curry.

....

(2)

(Total for Question 20 is 5 marks)

21 The top of a table is in the shape of a circle.
The table has a diameter of 80 cm.

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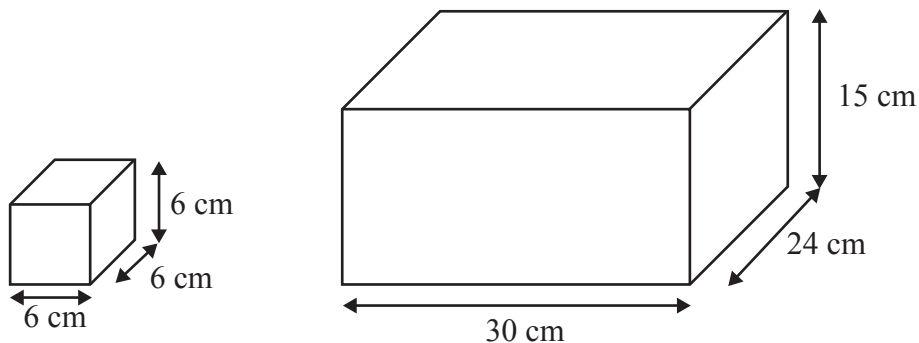Give your answer correct to 3 significant figures.

....

(Total for Question 21 is 3 marks)

*22 A company makes building bricks for children.
The bricks are all 6 cm cubes.

The bricks are going to be packed in boxes.

Diagram **NOT**
accurately drawn

15 cm

6 cm

6 cm

24 cm

6 cm

30 cm

Michael designs a box for the bricks.
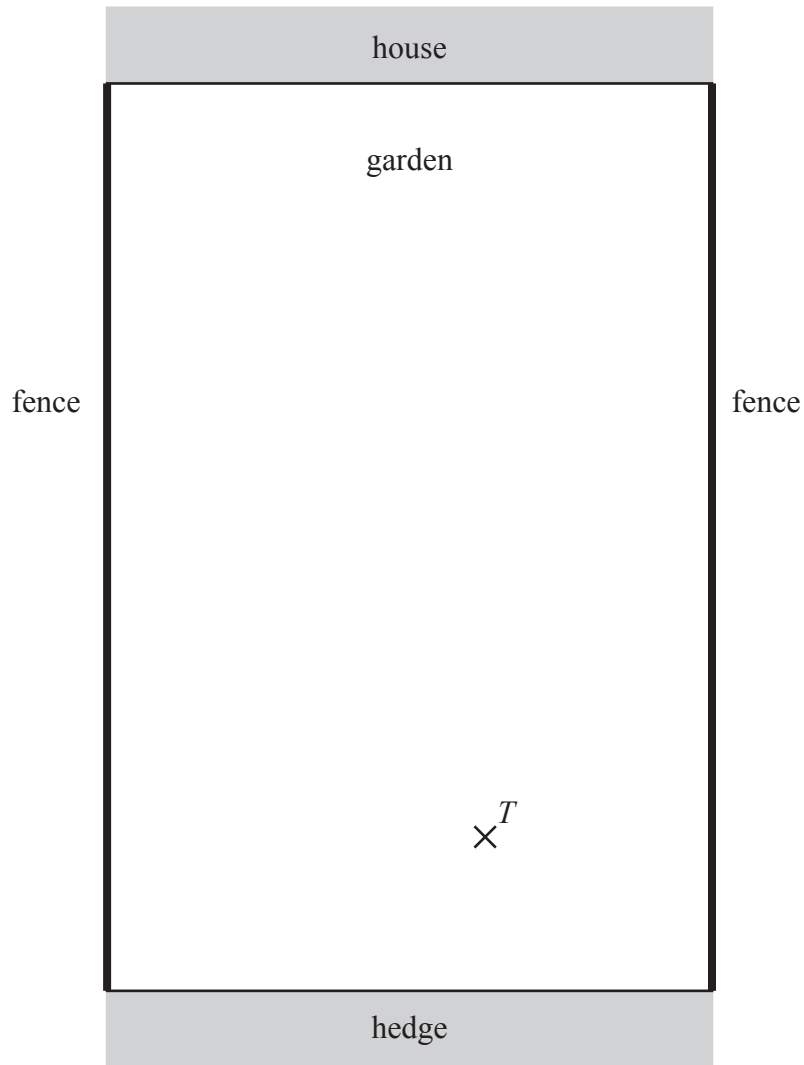The box is a cuboid.

The size of the box is 30 cm by 24 cm by 15 cm.

Will the box be big enough for 50 bricks?
You must give reasons for your answer.

(Total for Question 22 is 4 marks)

Turn over ▶

23 The scale drawing shows the rectangular garden of Mrs Brigg's house.

house

garden

fence   fence

$\times^{T}$

hedge

Scale : 1 cm represents 1 m

Mrs Briggs wants to put a bench in her garden.

There is an apple tree, *T*, in her garden.

The bench has to be
at least 2 m from the two fences
at least 5 m from the apple tree

On the scale drawing, show accurately by shading the region where Mrs Briggs could put her bench.

(Total for Question 23 is 4 marks)

24 William and Paul book a holiday for their families.
The total cost of the holiday would be £2400

William and Paul book their holiday early so they get $\frac{1}{5}$ off the price of the total cost of the holiday.

William and Paul share the total cost of the holiday in the ratio 3 : 5

Work out how much William pays and how much Paul pays.

William £ ....

Paul £ ....

(Total for Question 24 is 4 marks)

25 A car park is in the shape of a rectangle.
The length of the car park must be 30 m more than the width of the car park.

The perimeter of the car park must be less than 165 m.

The width of the car park must be a whole number of metres.

Work out the greatest possible width of the car park.

.... m

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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