

**MATHEMATICS –
COMPONENT 1
NON – CALCULATOR
MATHEMATICS
FOUNDATION TIER**

**TUESDAY,
21 MAY 2019 – MORNING**

**2 hours 15 minutes
(plus your additional
time allowance)**

**THE USE OF A
CALCULATOR IS NOT
PERMITTED IN THIS
EXAMINATION**

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	7	
2.	3	
3.	5	
4.	7	
5.	3	
6.	4	
7.	5	
8.	6	
9.	8	
10.	9	
11.	5	
12.	4	
13.	7	
14.	4	
15.	3	
16.	5	
17.	5	
18.	8	
19.	2	
20.	6	
21.	5	
22.	7	
23.	2	
Total	120	

Surname:	
Other Names:	
Centre Number:	
Candidate Number:	0

ADDITIONAL MATERIALS

A ruler, a protractor and a pair of compasses may be required.

ITEMS INCLUDED WITH QUESTION PAPER

A separate Formula List.

A separate Diagram Booklet.

A spare Diagram Booklet.

Models for Question 2 (a) and Question 5.

INSTRUCTIONS TO CANDIDATES

Use black ink, black ball – point pen, black felt tip or your usual method.

Write your name, centre number and candidate number in the spaces on the front cover.

Answer ALL questions.

Write your answers in the spaces provided.

If you run out of space, use the continuation pages at the back of the booklet, taking care to number the question(s) correctly.

(Turn over)

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part – question.

You are reminded of the need for good English and orderly, clear presentation in your answers.

1. (a) (i) Work out 0.5×100

[1 mark]

(ii) Work out $45 \div 10$

[1 mark]

continued on the next page . . .

(Turn over)

Question 1 continued

1. (b) Write 0.31 as

(i) a fraction,

[1 mark]

(ii) a percentage.

[1 mark]

continued on the next page . . .

(Turn over)

Question 1 continued

1. (c) Circle the greatest value.

4.07	4.18	4.601	4.0615	4.009
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[1 mark]

(d) Work out $\frac{4}{5}$ of 45

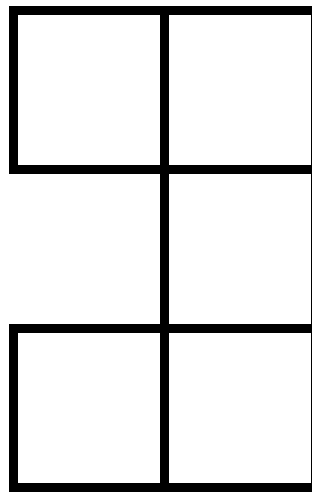
[2 marks]

(Turn over)

2. (a) Ask for the model for Question 2 (a).
The model is NOT made to scale.

Halima makes a shape by joining 5 cubes.
She looks at each of the side elevations,
from the positions *A*, *B*, *C* and *D*, and
the plan, from *E*.

- (i) Here is what Halima sees from
one of her positions.



Which position is this?
Circle your answer.

<i>A</i>	<i>B</i>	<i>D</i>	<i>C</i>	<i>E</i>
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[1 mark]

(Turn over)

Question 2 (a) continued

2. (a) (ii) How many square faces can
Halima see from position **C**?
Circle your answer.

1	2	3	4	5
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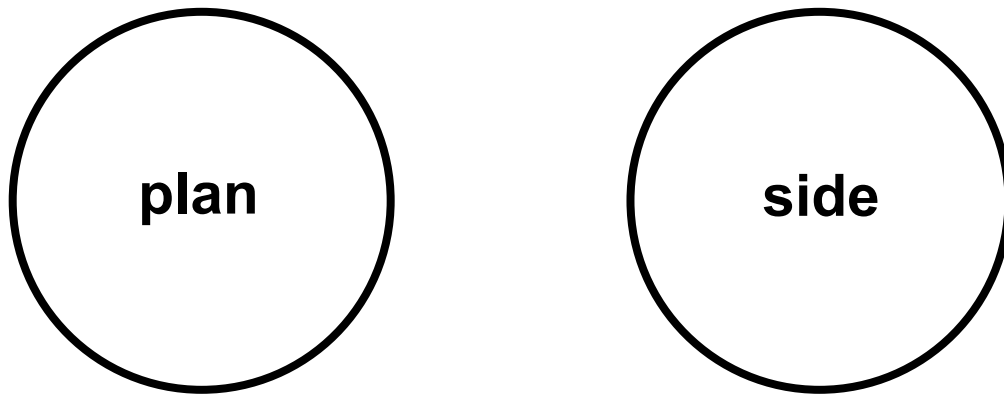
[1 mark]

continued on the next page . . .

(Turn over)

Question 2 continued

2. (b) The diagram below shows the plan and side elevation of another **3D** shape.



**Circle the correct name for the
3D shape shown.**

cylinder	circle	pyramid	cone	sphere
-----------------	---------------	----------------	-------------	---------------

[1 mark]

(Turn over)

3. **COVER INSURANCE** sells insurance for laptops.

They have two offers.

**Laptop insurance
OFFER 1**

**One payment only
£60 FOR ONE
WHOLE YEAR**

**Laptop insurance
OFFER 2**

**Pay monthly
12 MONTHS FOR
£4.50 PER MONTH**

- (a) Mika wants to buy insurance for his laptop.

**Show that if Mika uses OFFER 2 he will
save 10% of the cost of using OFFER 1**

(Turn over)

[3 marks]

3. (b) During April, COVER INSURANCE sold
630 policies.

How many policies per day, on average,
did they sell for this month?

[2 marks]

(Turn over)

4. (a) (i) The table below shows the total number of medals won by four countries in the **2012 London Olympic Games**.

Country	Number of medals
Brazil	17
Kenya	12
Jamaica	12
South Africa	6

On the grid provided for Question 4 (a) (i) in the separate Diagram Booklet, draw a bar chart to show this information.

[3 marks]

continued on the next page . . .

(Turn over)

Question 4 (a) continued

- 4. (a) (ii) Look at the diagram for Question 4 (a) (ii) in the separate Diagram Booklet.**

The diagram is a pictogram.

The pictogram shows the total number of medals won by the same four countries in the 2016 Rio Olympic Games.

Use the information given in the table and pictogram to complete the sentences below:

The total number of medals won by Brazil in 2016 is _____ more than they won in 2012.

The total number of medals won by _____ in 2016 is 4 more than they won in 2012.

[2 marks]

(Turn over)

Question 4 continued

4. (b) In **2016**, the total of gold, silver and bronze medals won by China was **70**

They won:

- **18** silver medals,
- the same number of gold medals as they did bronze medals.

How many gold medals did China win?

_____ gold medals

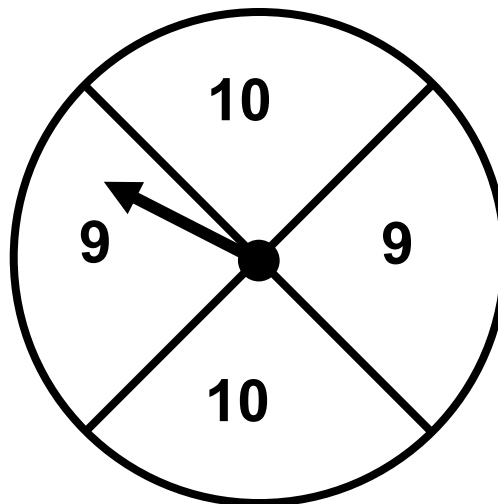
[2 marks]

(Turn over)

5. Ask for the dice for Question 5.

It is a fair 8 – sided dice numbered 1 – 8

Look at the diagram below, it is a fair spinner.



**Jamie rolls the dice and spins the spinner.
He then multiplies the two scores.**

**(a) Look at the diagram for Question 5 (a)
in the separate Diagram Booklet.**

**Complete the diagram to show all
Jamie's possible outcomes.**

[1 mark]

continued on the next page . . .

(Turn over)

Question 5 continued

- 5. (b) Find the probability that Jamie's outcome is an even number greater than 50**

[2 marks]

(Turn over)

6. Look at the diagram for Question 6 in the separate Diagram Booklet.

In the diagram, each square on the grid represents a one centimetre square.

The diagram shows the line AB on a grid.

- (a) (i) Write down the coordinates of A .

A (_____ , _____)

[1 mark]

- (ii) The point C is the mid – point of AB .

Mark the position of the point C on the grid.

[1 mark]

continued on the next page . . .

(Turn over)

Question 6 continued

6. (b) The line BD is parallel to the y – axis.

Triangle ABD is a right – angled triangle.

Mark the position of point D on the grid
and write down the length of AD .

Remember: In the diagram, each square
on the grid represents a one centimetre
square.

Length AD = _____ cm

[2 marks]

(Turn over)

7. (a) Simplify

(i) $2f - g + 5f - 3g$

[2 marks]

(ii) $1 + 4 \times c \times c$

[1 mark]

continued on the next page . . .

(Turn over)

Question 7 continued

7. (b) (i) This formula converts a UK shoe size to a Japanese shoe size.

$$\text{Japanese size} = \text{UK size} + 19$$

Yuto wears a Japanese size **29.5**

What would Yuto's shoe size be in the UK?

[1 mark]

continued on the next page . . .

(Turn over)

Question 7 (b) continued

7. (b) (ii) The table below shows the equivalent shoe sizes used in the UK and the USA.

UK size	5	6	7	8	9
USA size	6	7	8	9	10

Complete this formula connecting the UK size and the USA size.

UK size = _____

[1 mark]

(Turn over)

8. Look at the table for Question 8 in the separate Diagram Booklet.

The table shows nutritional information about a bottle of the sports drink, FITADE.

- (a) Complete the table.

[3 marks]

continued on the next page . . .

(Turn over)

Question 8 continued

8. (b) One afternoon, Tori drinks 3 full bottles of FITADE.

How many millilitres of FITADE does Tori drink altogether, and how many grams of salt does this contain?

She drinks _____ ml

containing _____ grams of salt.

[2 marks]

continued on the next page . . .

(Turn over)

Question 8 continued

8. (c) Show that sugars are **64%** of the carbohydrate in FITADE.

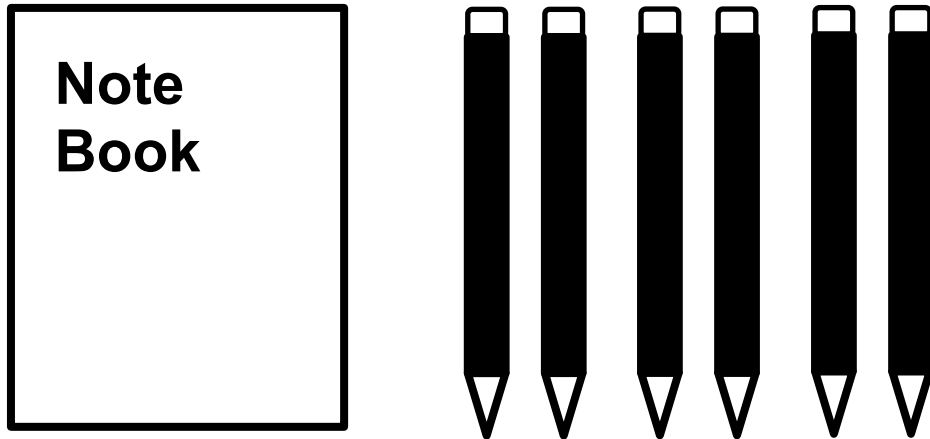
You must show all your working.

[1 mark]

(Turn over)

9. Petra is shopping with 2 of her friends.

(a) She buys a note book and
six IDENTICAL pencils.



The note book costs the same as
2 of the pencils.

Her bill is £16.80

(i) How much does a note book cost?

(Turn over)

[3 marks]

continued on the next page . . .

(Turn over)

Question 9 (a) continued

9. (a) (ii) Petra pays with a £50 note.

She is given £34.20 change.

She tells the shopkeeper,

“You have given me too much change.”

Is Petra correct?

Yes

☐

No

☐

Show how you decide.

[1 mark]

continued on the next page . . .

(Turn over)

Question 9 continued

- 9. (b) Look at the diagram for Question 9 (b) in the separate Diagram Booklet.**

The 3 friends go to a café.

Part of the menu is shown.

Each of the 3 friends orders one drink and one cake from this menu.

They save a total of exactly £5 using the 3 for 2 offers.

Their bill totals £16.50 AFTER the saving has been taken off.

What drinks and cakes did the 3 friends order?

You must show all your working.

(Turn over)

30

Drinks:

_____ ,

_____ and

Cakes:

_____ ,

_____ and

[4 marks]

(Turn over)

10. Twelve members of a running club take part in three runs.

(a) The table below shows the times taken, in hours, by the 12 runners to complete the first run.

1.2	0.9	2.5	1.3	2.1	2.6
1.8	2.0	2.1	2.1	1.5	2.2

(i) Find the mode of the times.

[1 mark]
(Turn over)

Question 10 (a) continued

10. (a) (ii) Find the range of the times.

[1 mark]

10. (a) (iii) A runner was chosen at random from those who took part in the first run.

Find the probability that this runner took at most 1.5 hours.

[1 mark]

(Turn over)

Question 10 continued

- 10. (b) Look at the diagram for Question 10 (b) in the separate Diagram Booklet.
The diagram is a scatter diagram.**

The scatter diagram shows the times it took 10 of the runners to complete the other two runs.

- (i) One of these 10 runners was injured during the third run and walked most of the way.**

On the diagram, CIRCLE the plot most likely to represent this runner on the scatter diagram.

[1 mark]

continued on the next page . . .

(Turn over)

Question 10 (b) continued

- 10. (b) (ii) The times, in hours, taken by the remaining 2 runners were:**

	Runner 11	Runner 12
Second run	1.5	2.0
Third run	2.0	2.5

Plot these times on the scatter diagram.

[2 marks]

- (iii) Using the information on the completed scatter diagram, what was the difference between the fastest time for the second run and the fastest time for the third run?
Give your answer in minutes.**

(Turn over)

Time difference = _____ minutes
[3 marks]

11. (a) Look at the diagram for Question 11 (a) in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

The diagram shows triangle ABC .

In the diagram,

$$AB = 15 \text{ cm}$$

$$AC = 41 \text{ cm}$$

$$BC = 52 \text{ cm}$$

Work out the area of triangle ABC .

Area $ABC =$ _____ cm^2

[2 marks]

continued on the next page . . .

(Turn over)

Question 11 continued

11. (b) Look at the diagram for Question 11 (b) in the separate Diagram Booklet.
- The diagram is NOT drawn to scale.
- The diagram shows a shape.
- The shape is made from two rectangles.
- The shape has one line of symmetry.
- The perimeter of the shape is 40 cm.
- The length of BC is 4 times the length of AB .

Work out the length of BC .

$BC =$ _____ cm [3 marks]

(Turn over)

12. Look at the diagram for Question 12 in the separate Diagram Booklet.

The diagram IS drawn to scale.

The diagram shows the position of two points, *A* and *B*.

The scale is 1 cm represents 1 km.

(a) Measure and write down the bearing of *B* from *A*.

[1 mark]

continued on the next page . . .

(Turn over)

Question 12 continued

- 12. (b) Point C is 5 km from A and 6 km from B .**

The bearing of C from B is an acute angle.

Complete the diagram to find the position of point C .

[3 marks]

(Turn over)

13. Steph is a baker.

- (a) She bakes 42 white rolls and
60 brown rolls.**

**Write the ratio of white rolls to brown rolls
in its simplest form.**

white rolls : brown rolls = _____ : _____

[2 marks]

continued on the next page . . .

(Turn over)

Question 13 continued

- 13. (b) Steph makes scones in three flavours: cheese, fruit and plain.**

She makes:

- **4 times as many fruit scones as cheese scones,**
- **3 times as many plain scones as cheese scones.**

She sells each scone for the same price.

She makes a total of £96 from the sale of all the scones.

How much does she make from the sale of the plain scones?

(Turn over)

[3 marks]

13. (c) Steph makes and sells birthday cakes.
Each cake costs £54 to make.
She makes a profit of 15% on each cake.

What is the selling price of Steph's birthday cakes?

Selling price = £ _____

[2 marks]

(Turn over)

14. Look at the diagram for Question 14 in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

The diagram shows points

P, *Q*, *R*, *S*, *T* and *U*.

In the triangle *RTS*,

$RT = TS$ and angle $RTS = 100^\circ$

Angle *UTQ* is a right angle.

QT is parallel to *RS*.

Angle *PTU* is labelled *x*.

Show that $x = 50^\circ$

Give a reason for each step of your answer.

(Turn over)

15. Terry is doing his homework.

(a) He is trying to find the value of x when

$$x : 2 = 30 : 12$$

He writes:

$$\begin{array}{c} -18 \\ \curvearrowright \\ x : 2 = 30 : 12 \end{array}$$

The rule is -18
so $x = 20$

Explain why Terry is wrong.

[1 mark]

continued on the next page . . .

(Turn over)

Question 15 continued

15. (b) Terry's next question is:

A factory production line makes 275 thousand cans of drink in 5 hours. How many hours would it take for this production line to make 165 thousand cans of the same drink? You may assume each can is the same size.

Terry thinks the answer is 3 hours.

Is Terry correct?

Yes

☐

No

☐

Show how you decide.

(Turn over)

[2 marks]

16. (a) Calculate $\frac{3}{7} + \frac{7}{9}$

Give your answer as a mixed number.

[3 marks]

continued on the next page . . .

(Turn over)

Question 16 continued

16. (b) When a fraction is divided by $\frac{1}{3}$
the answer is $\frac{6}{7}$

Find this fraction.

[2 marks]

(Turn over)

17. Huw is paid a weekly wage.

Every week he:

- **saves $\frac{1}{5}$ of his wage,**
- **spends 70% of the money HE HAS LEFT on his living expenses,**
- **spends all that remains on his social life.**

(a) One week, Huw saves £40

How much does Huw spend on his social life?

(Turn over)

[3 marks]

**17. (b) What percentage of his weekly wage does
Huw spend on his social life?**

[2 marks]

(Turn over)

18. (a) Solve $19 - 4x = 11$

[2 marks]

continued on the next page . . .

(Turn over)

Question 18 continued

18. (b) Solve $\frac{2x - 3}{4} = 3x$

[3 marks]

continued on the next page . . .

(Turn over)

Question 18 continued**18. (c) (i) Solve $3x + 2 > 5$**

[2 marks]

(ii) On the diagram provided for Question 18 (c) (ii) in the separate Diagram Booklet, represent your answer to part (c) (i) on the number line shown.

[1 mark]**(Turn over)**

19. Look at the diagram for Question 19 (a) in the separate Diagram Booklet.

The diagram shows a table and a pie chart.

Cherie is in charge of marketing for a tourist attraction.

(a) One weekend, she collects some data about the value of ice cream sales from the café.

She records her data in the table and uses it to draw the pie chart.

State one criticism of the use of a pie chart to display her data.

[1 mark]

continued on the next page . . .

(Turn over)

Question 19 continued

- 19. (b) Look at the table for Question 19 (b) in the separate Diagram Booklet.**

Cherie also records the number of visitors to the tourist attraction each season for 4 years.

Her results are shown in the table.

Comment on the trend in the ANNUAL number of visitors shown by the data in the table.

[1 mark]

(Turn over)

20. (a) $120 = 2^3 \times 3^k \times 5$

Find the value of k .

[1 mark]

continued on the next page . . .

(Turn over)

Question 20 continued

20. (b) Write 168 as a product of its prime factors.

[2 marks]

continued on the next page . . .

(Turn over)

Question 20 continued

- 20. (c) LOWATTS Ltd makes light bulbs that are identical in size.**

**They have regular orders from
COMPANY A for 120 light bulbs and from
COMPANY B for 168 light bulbs.**

**LOWATTS Ltd uses one size of box to
supply both COMPANY A and
COMPANY B.**

**Each box used contains the same
number of light bulbs and is full.**

**The number of boxes used is as few
as possible.**

**How many light bulbs does each
box hold?**

(Turn over)

[3 marks]

21. When Jenna was measured recently she was **127 cm** tall, **CORRECT TO THE NEAREST CENTIMETRE**.

For safety reasons, the minimum height for a person to ride the Big Coaster at a funfair in the USA is **50 inches**.

You are given:

$$20 \text{ inches} = 50.8 \text{ cm.}$$

You must be
this tall to ride



continued on the next page . . .

(Turn over)

Question 21 continued

- 21. (a) Using the information given, decide whether it might possibly be safe, it is definitely safe, or it is definitely not safe for Jenna to ride the Big Coaster.**

Might possibly be safe

☐

Definitely safe

☐

Definitely not safe

☐

Show how you decide.

(Turn over)

[3 marks]

continued on the next page . . .

(Turn over)

Question 21 continued

- 21. (b) (i) State an assumption that you have made in your answer to part (a).**

[1 mark]

- (ii) Comment on the effect that your assumption has had on your decision.**

[1 mark]

(Turn over)

22. The table below shows some of the values of $y = x^2 + x - 1$ for $-2 \leq x \leq 1$

x	$y = x^2 + x - 1$
-2	
-1	-1
-0.5	-1.25
0	
1	

- (a) Complete the table above.

[2 marks]

continued on the next page . . .

(Turn over)

Question 22 continued

- 22. (b) On the graph paper provided for Question 22 (b) in the separate Diagram Booklet, draw the graph of**

$$y = x^2 + x - 1 \text{ for } -2 \leq x \leq 1$$

[2 marks]

- (c) State the equation of the line of symmetry of the curve $y = x^2 + x - 1$**

[1 mark]

- (d) Use your graph to solve $x^2 + x - 1 = 0$**

[2 marks]

(Turn over)

23. $\mathbf{p} = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$ and $\mathbf{q} = \begin{pmatrix} -3 \\ 2 \end{pmatrix}$

Work out the column vector $\frac{1}{2}\mathbf{p} - \mathbf{q}$

$$\frac{1}{2}\mathbf{p} - \mathbf{q} = \begin{pmatrix} \\ \end{pmatrix}$$

[2 marks]

END OF PAPER

TOTAL 120 MARKS

(Turn over)

Question number	Additional Pages, if required. Write the question number(s) in the left - hand margin.

(Turn over)

Question number	Additional Pages, if required. Write the question number(s) in the left - hand margin.



GCSE
C300U10-1



MATHEMATICS – COMPONENT 1
NON – CALCULATOR MATHEMATICS
FOUNDATION TIER

TUESDAY, 21 MAY 2019 – MORNING

Diagram Booklet

Surname:	
Other Names:	
Centre Number:	
Candidate Number:	0

Question 4 (a) (i)

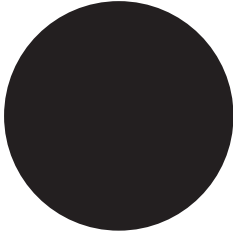
2012 OLYMPIC MEDALS WON

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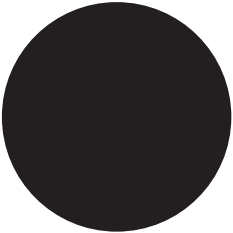
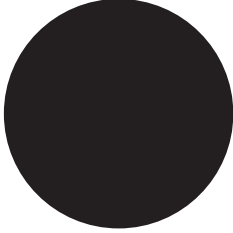
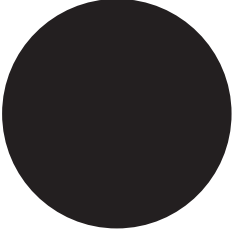
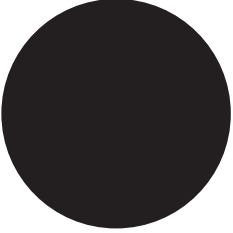
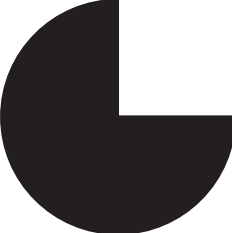
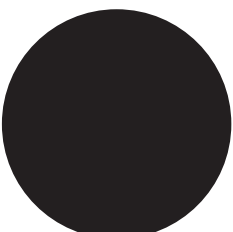
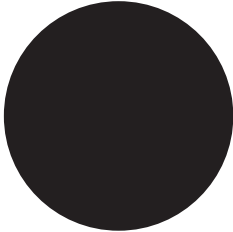
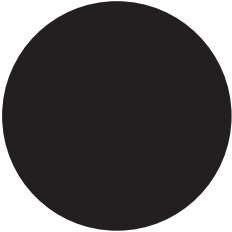
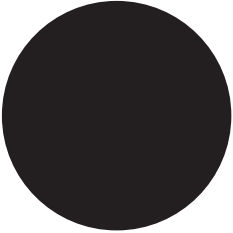
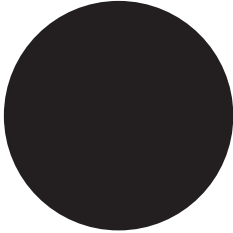
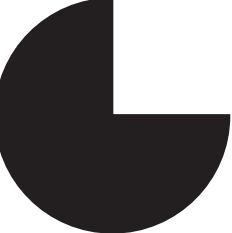
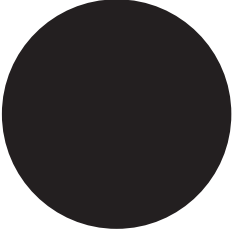
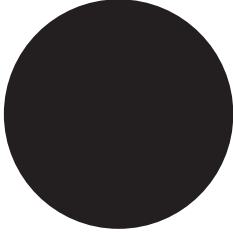
Question 4 (a) (ii)

Pictogram

Key:



represents 4 medals

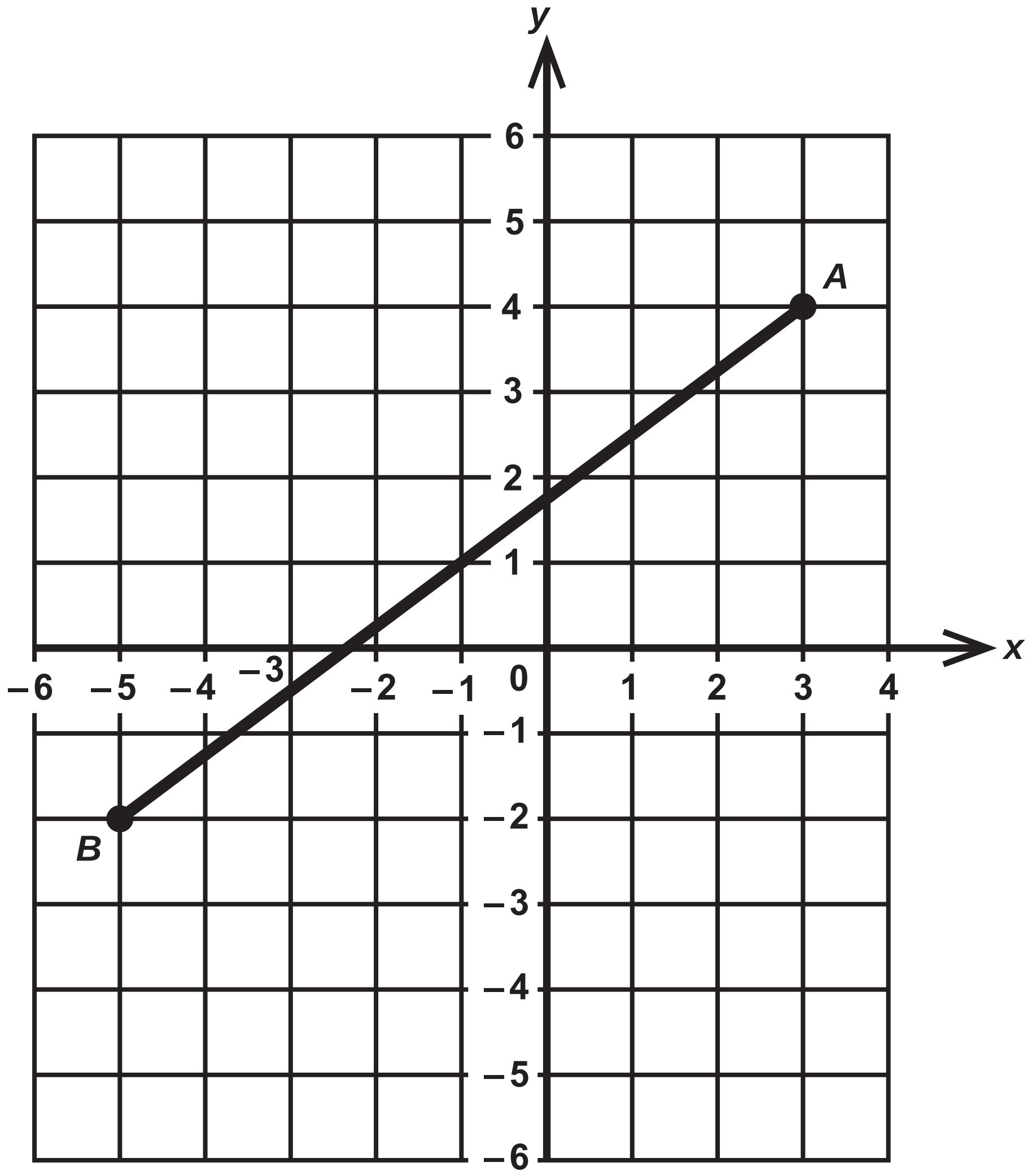
Brazil					
Kenya					
Jamaica					
South Africa					

Question 5 (a)

Spinner	10	10	20			50	60	70	80
	9	9	18		36		54	63	72
	×	1	2	3	4	5	6	7	8
Dice									

Question 6

In the diagram below, each square on the grid represents a one centimetre square.



Question 8
Table

Nutritional Information	per 100 ml	per bottle
Energy (kilocalories)	28	_____
Carbohydrate (grams)	6.25	25
of which sugars (grams)	4	16
Salt (grams)	_____	0.4

Question 9 (b)

DRINKS	
Flat white	£4.25
Latte	£3.95
Americano	£2.95
Tea (per pot)	£3.00
CAKES	
Cupcake	£2.00
Cake of the day (per slice)	£4.00

Today only!

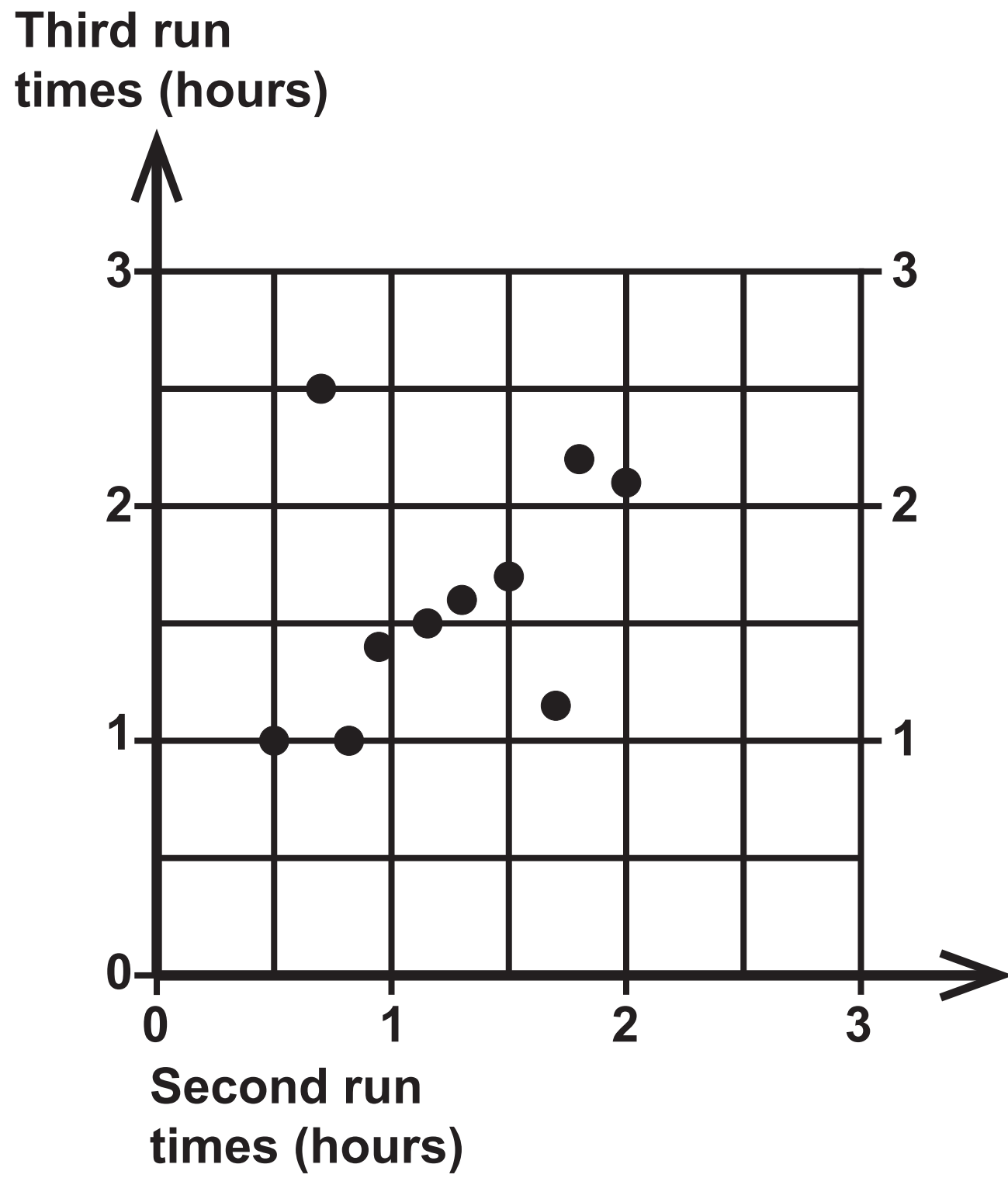
3 for 2* on all drinks

AND

3 for 2* on all cakes

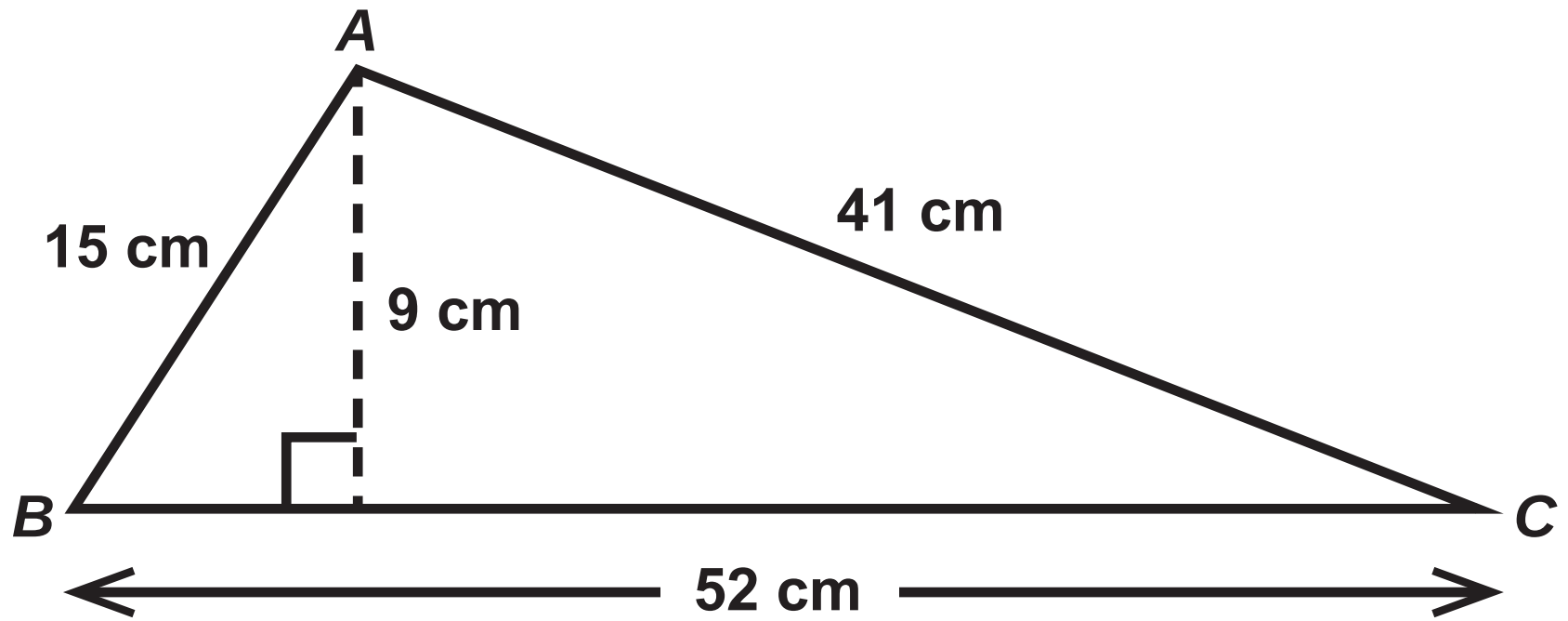
***cheapest drink free and
cheapest cake free**

Question 10 (b)



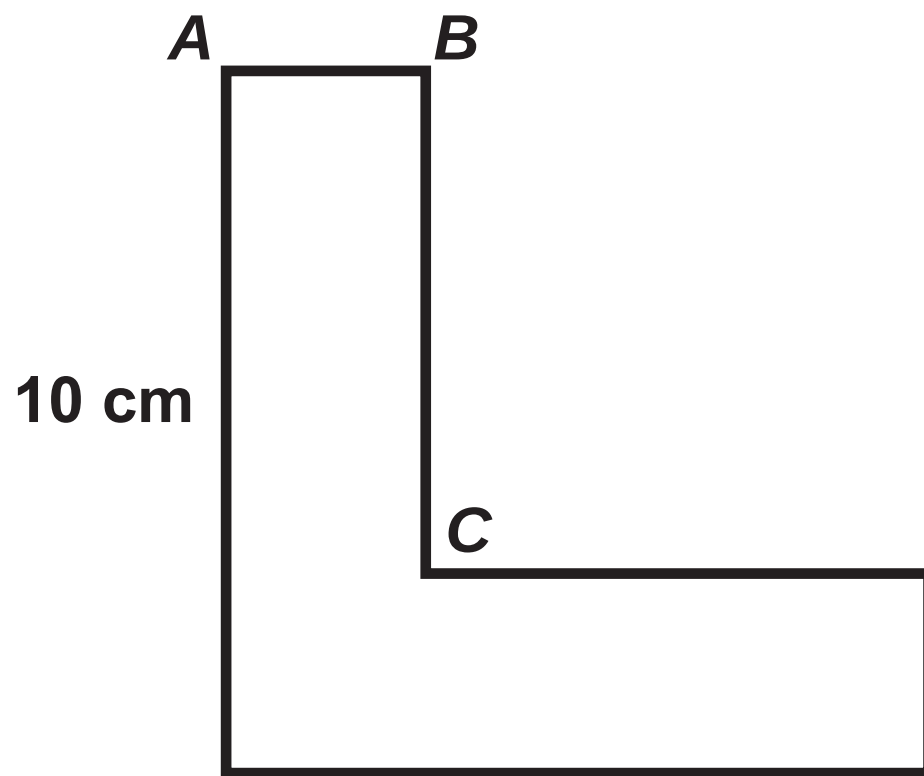
Question 11 (a)

Diagram NOT drawn to scale



Question 11 (b)

Diagram NOT drawn to scale



Question 12

Scale: 1 cm represents 1 km

North



B

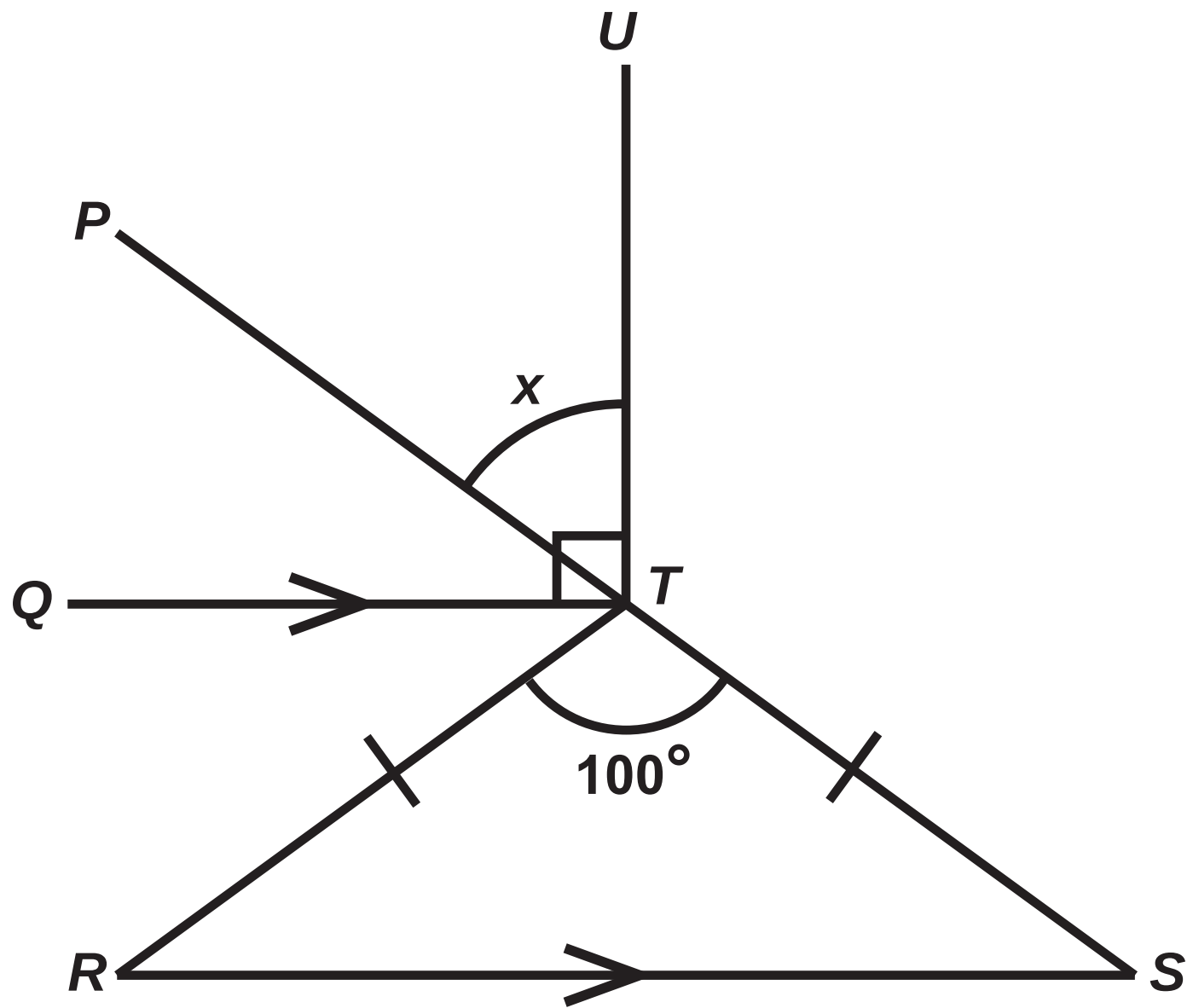
North



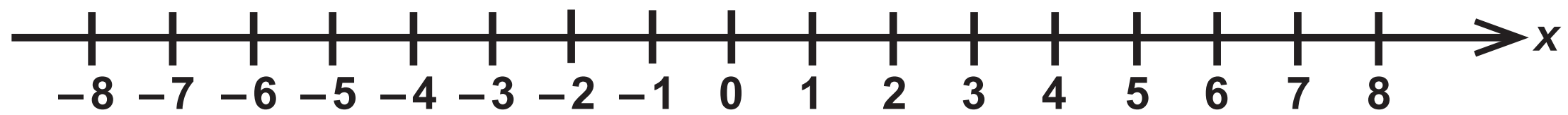
A

Question 14

Diagram NOT drawn to scale

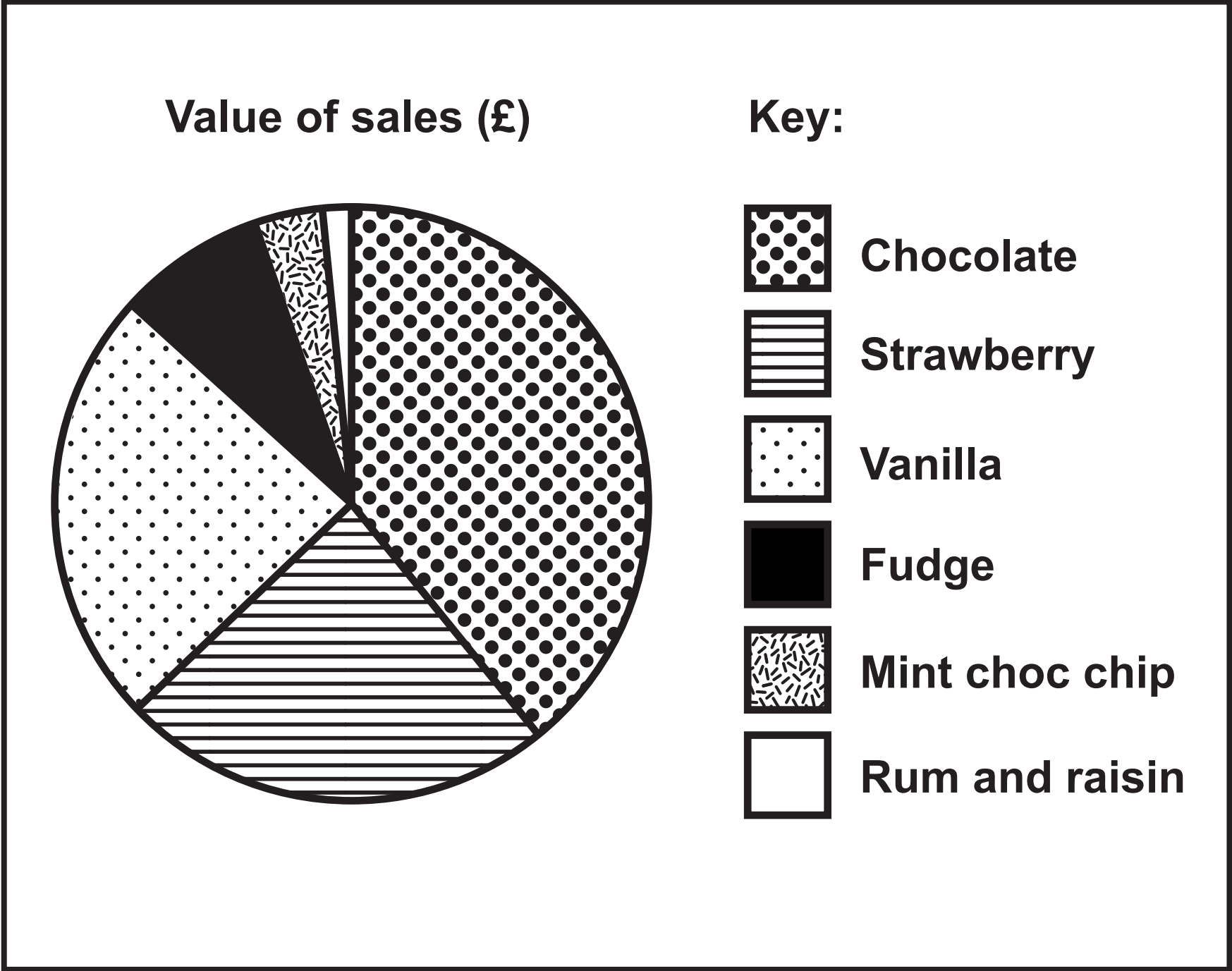


Question 18 (c) (ii)



Question 19 (a)

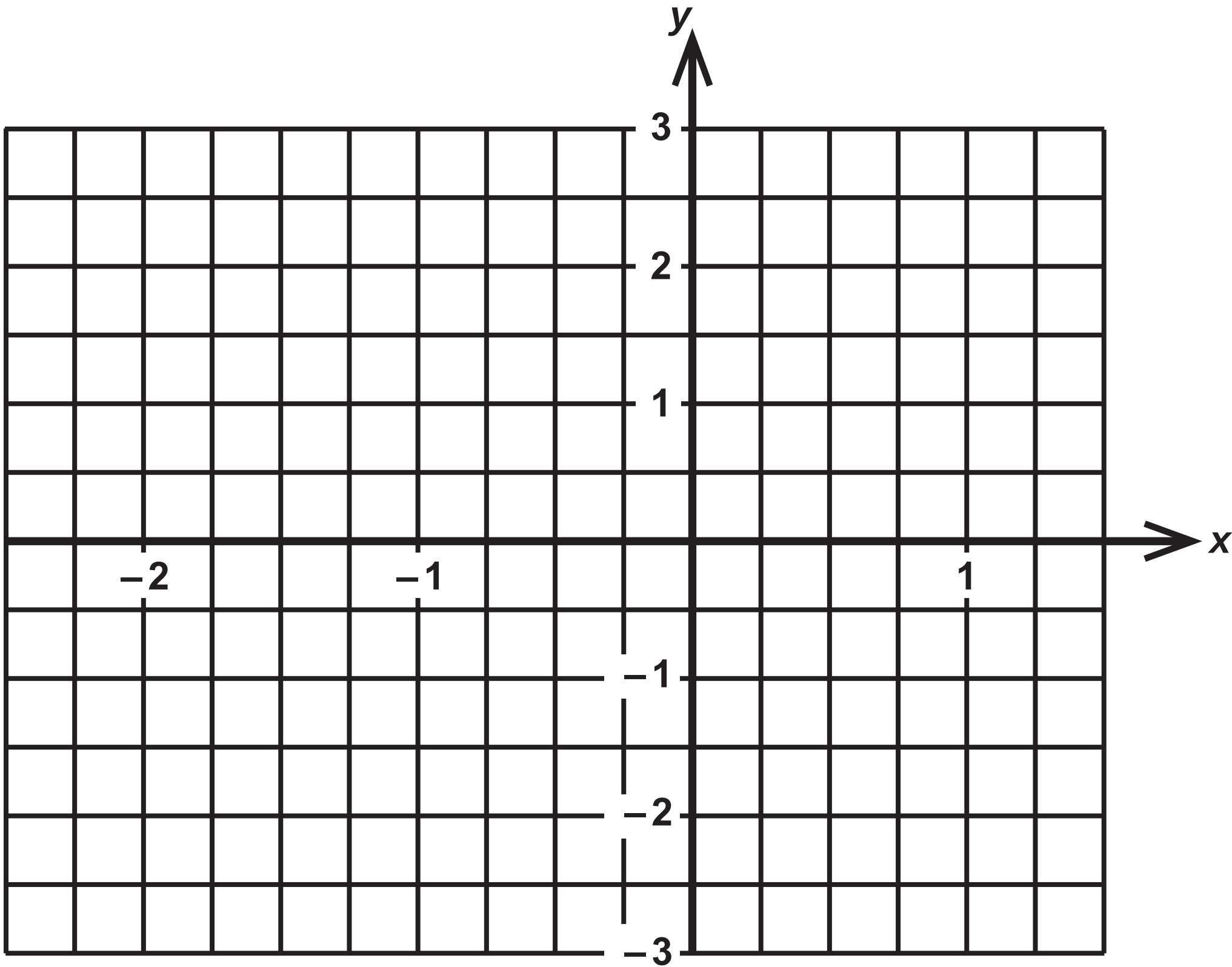
Ice cream flavour	Value of sales (£)
Chocolate	500
Strawberry	300
Coffee	0
Vanilla	300
Fudge	100
Green tea	0
Mint choc chip	50
Rum and raisin	20



Question 19 (b)
Table

	Season	Winter	Spring	Summer	Autumn
Visitors (thousands)	2015	9	14	19	13
	2016	9	13	17	12
	2017	6	11	14	9
	2018	4	8	15	10

Question 22 (b)





GCSE
C300U10-1



MATHEMATICS – COMPONENT 1
NON – CALCULATOR MATHEMATICS
FOUNDATION TIER

TUESDAY, 21 MAY 2019 – MORNING

Spare Diagram Booklet

Surname:	
Other Names:	
Centre Number:	
Candidate Number:	0

Question 4 (a) (i)

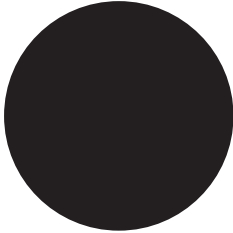
2012 OLYMPIC MEDALS WON

[illegible]

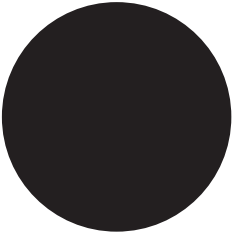
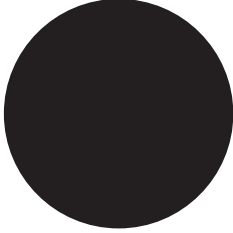
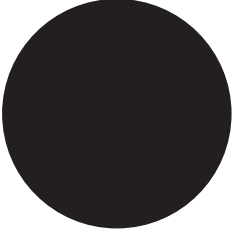
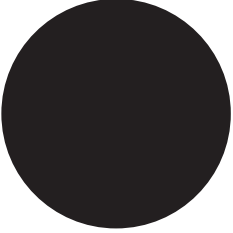
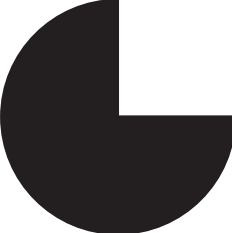
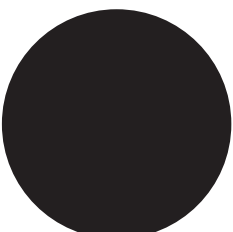
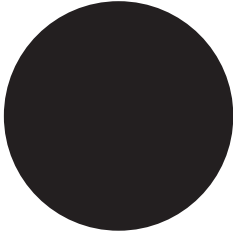
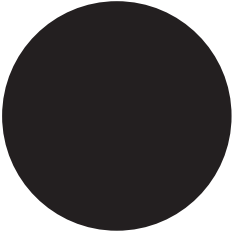
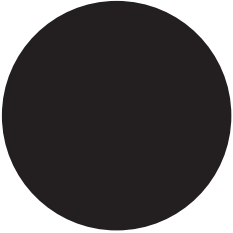
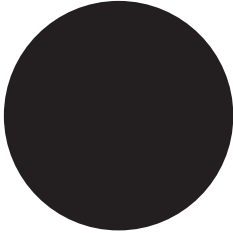
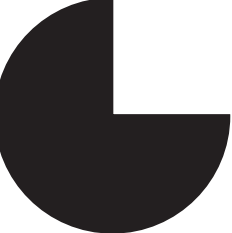
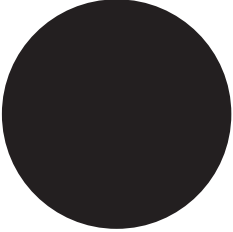
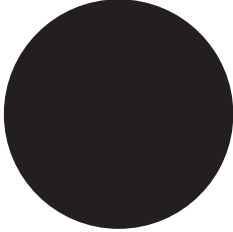
Question 4 (a) (ii)

Pictogram

Key:



represents 4 medals

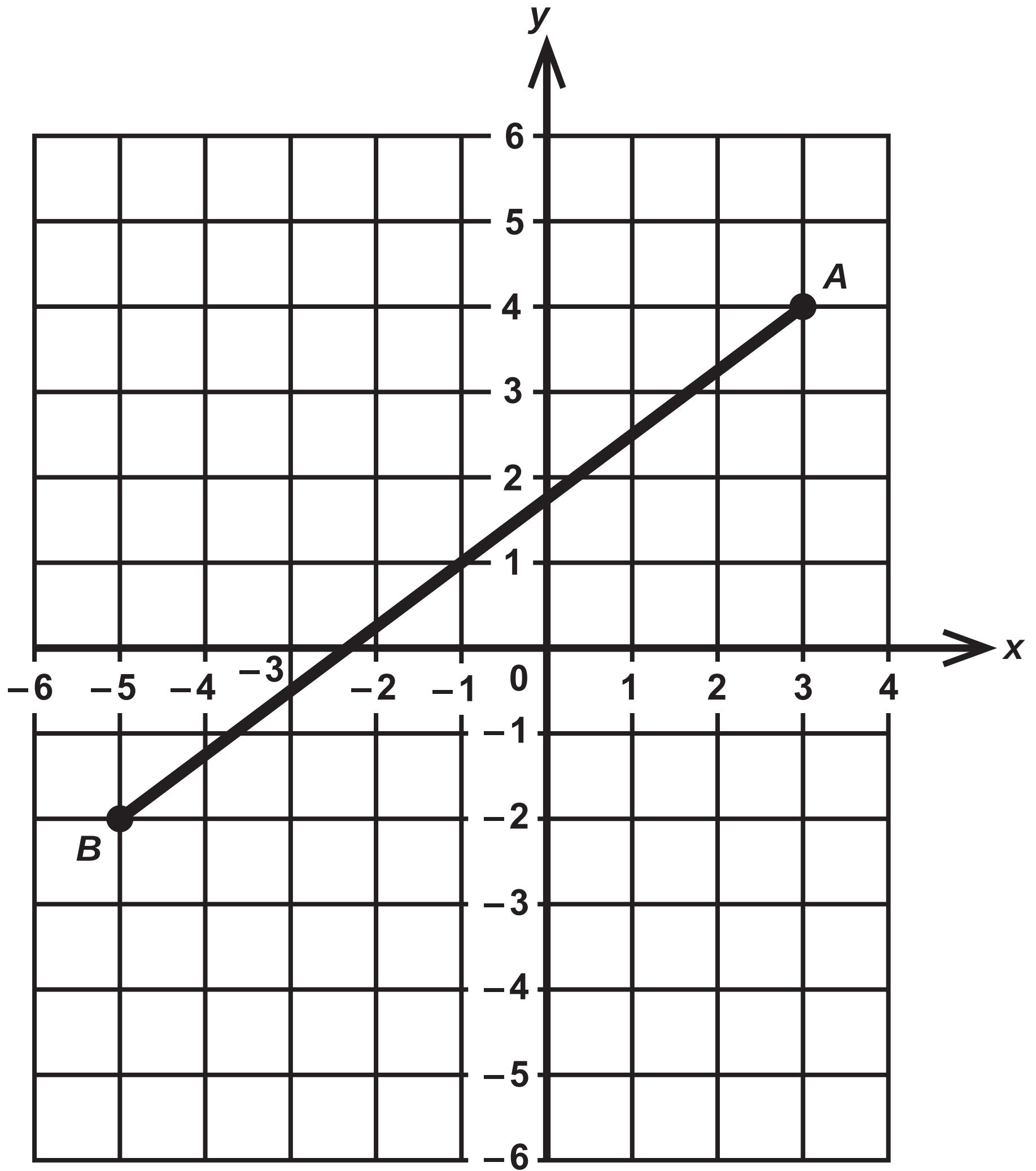
Brazil					
Kenya					
Jamaica					
South Africa					

Question 5 (a)

Spinner	10	10	20			50	60	70	80
	9	9	18		36		54	63	72
	×	1	2	3	4	5	6	7	8
	Dice								

Question 6

In the diagram below, each square on the grid represents a one centimetre square.



Question 8
Table

Nutritional Information	per 100 ml	per bottle
Energy (kilocalories)	28	_____
Carbohydrate (grams)	6.25	25
of which sugars (grams)	4	16
Salt (grams)	_____	0.4

Question 9 (b)

DRINKS	
Flat white	£4.25
Latte	£3.95
Americano	£2.95
Tea (per pot)	£3.00
CAKES	
Cupcake	£2.00
Cake of the day (per slice)	£4.00

Today only!

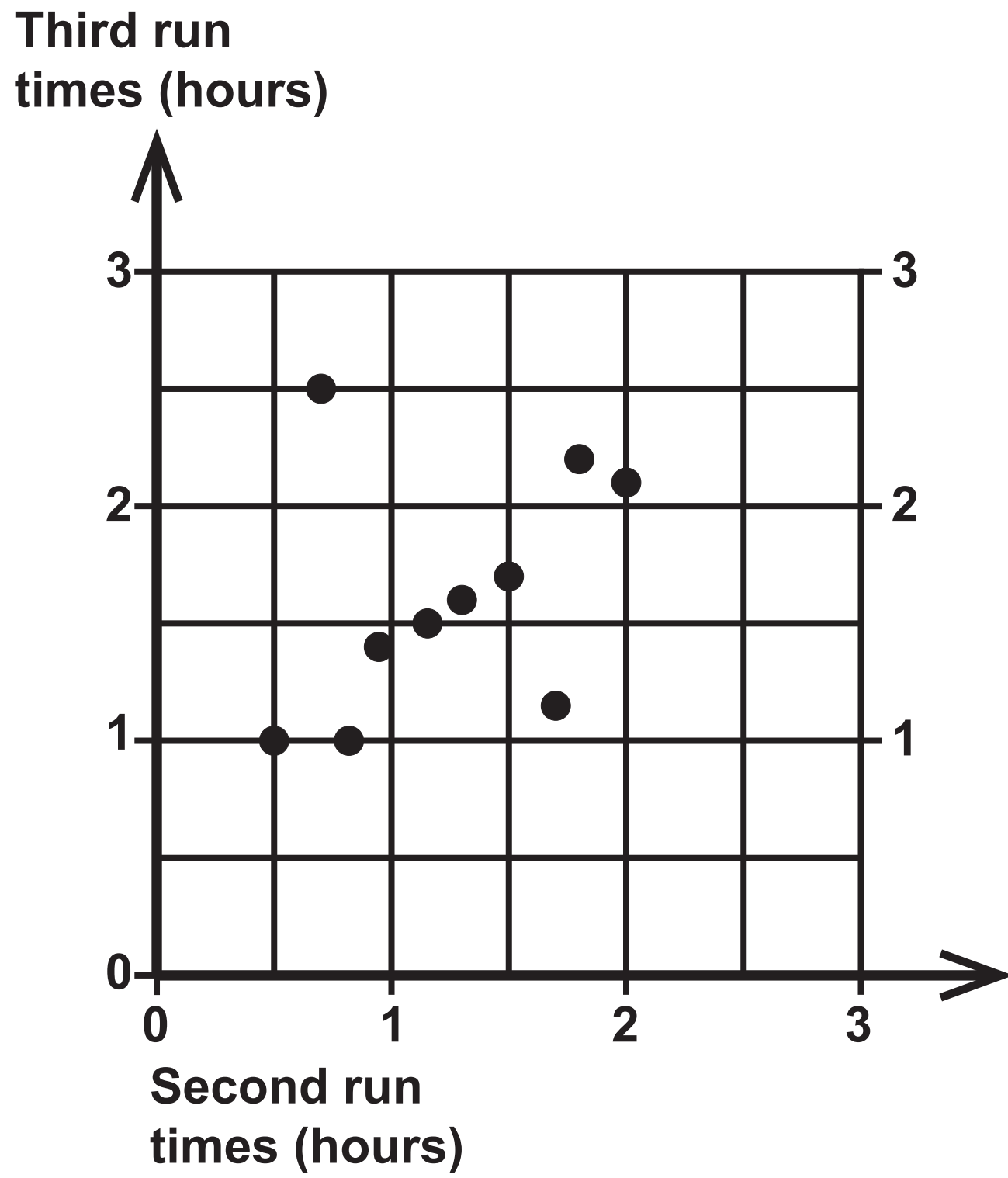
3 for 2* on all drinks

AND

3 for 2* on all cakes

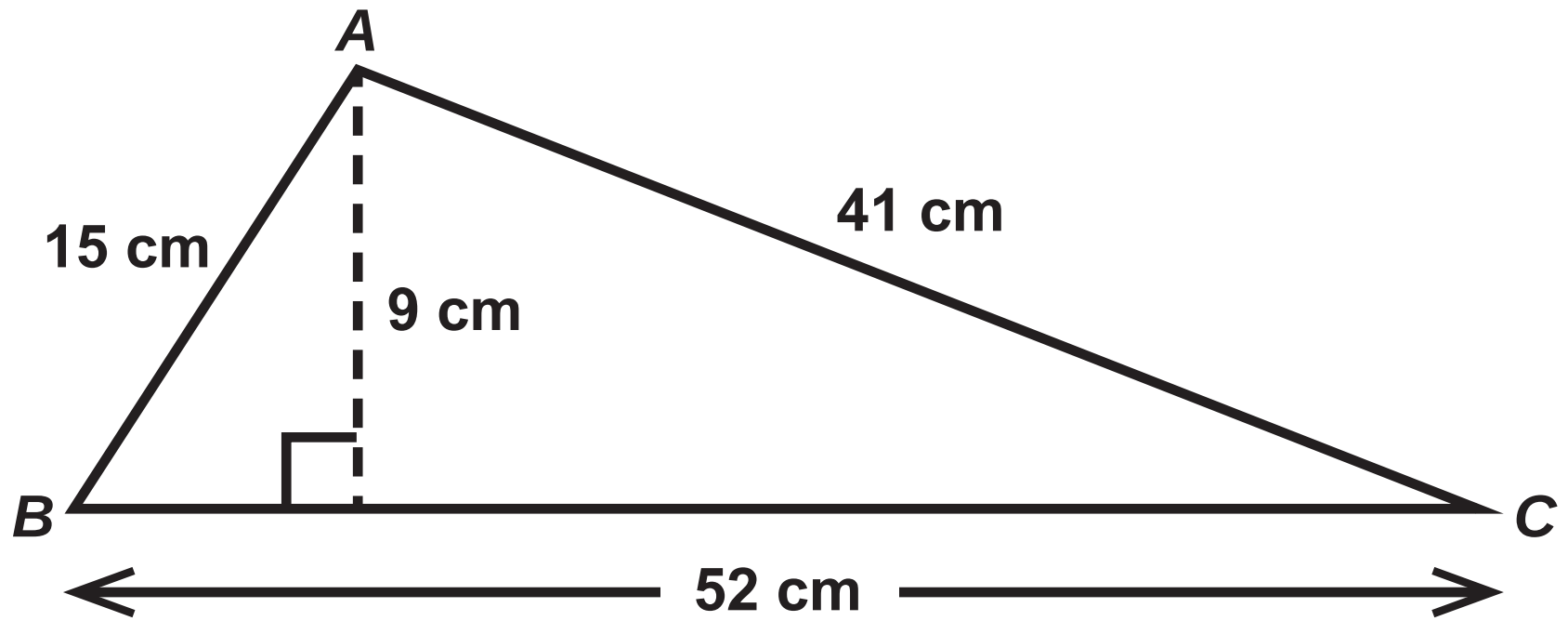
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Question 10 (b)



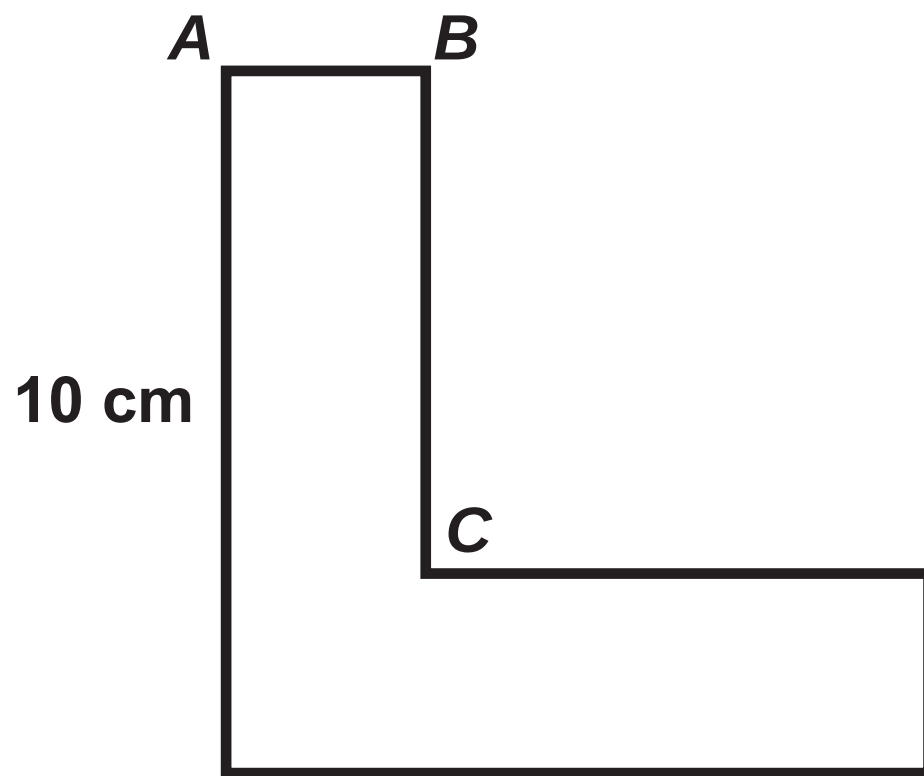
Question 11 (a)

Diagram NOT drawn to scale



Question 11 (b)

Diagram NOT drawn to scale



Question 12

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North



B

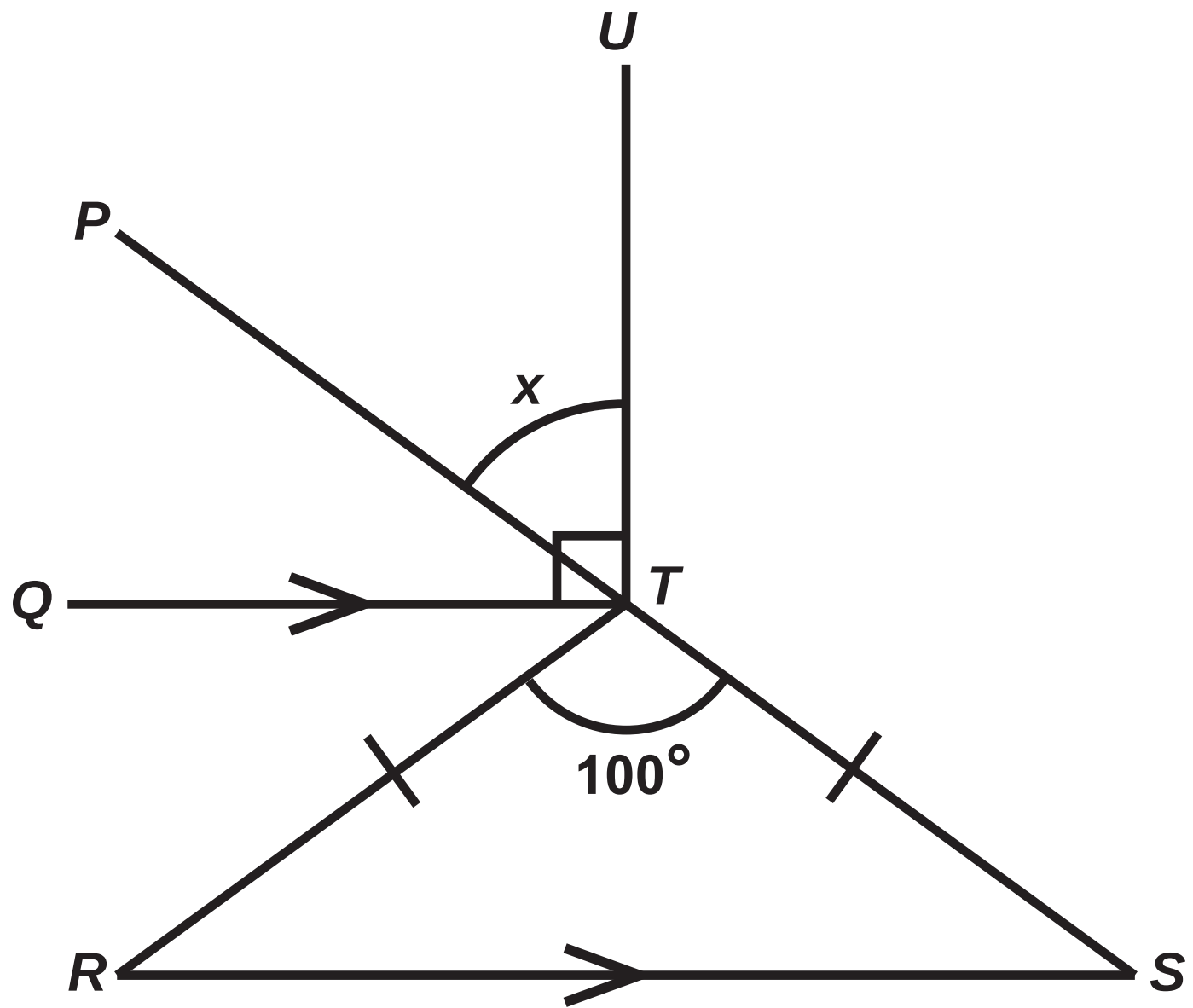
North



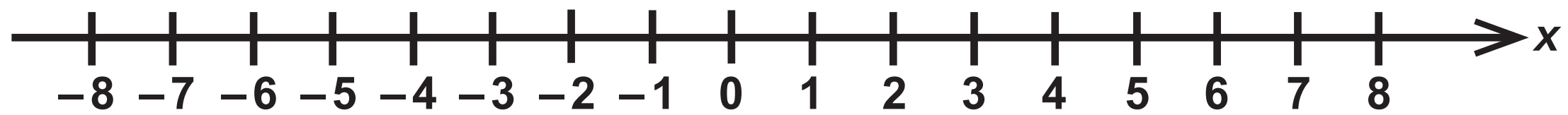
A

Question 14

Diagram NOT drawn to scale

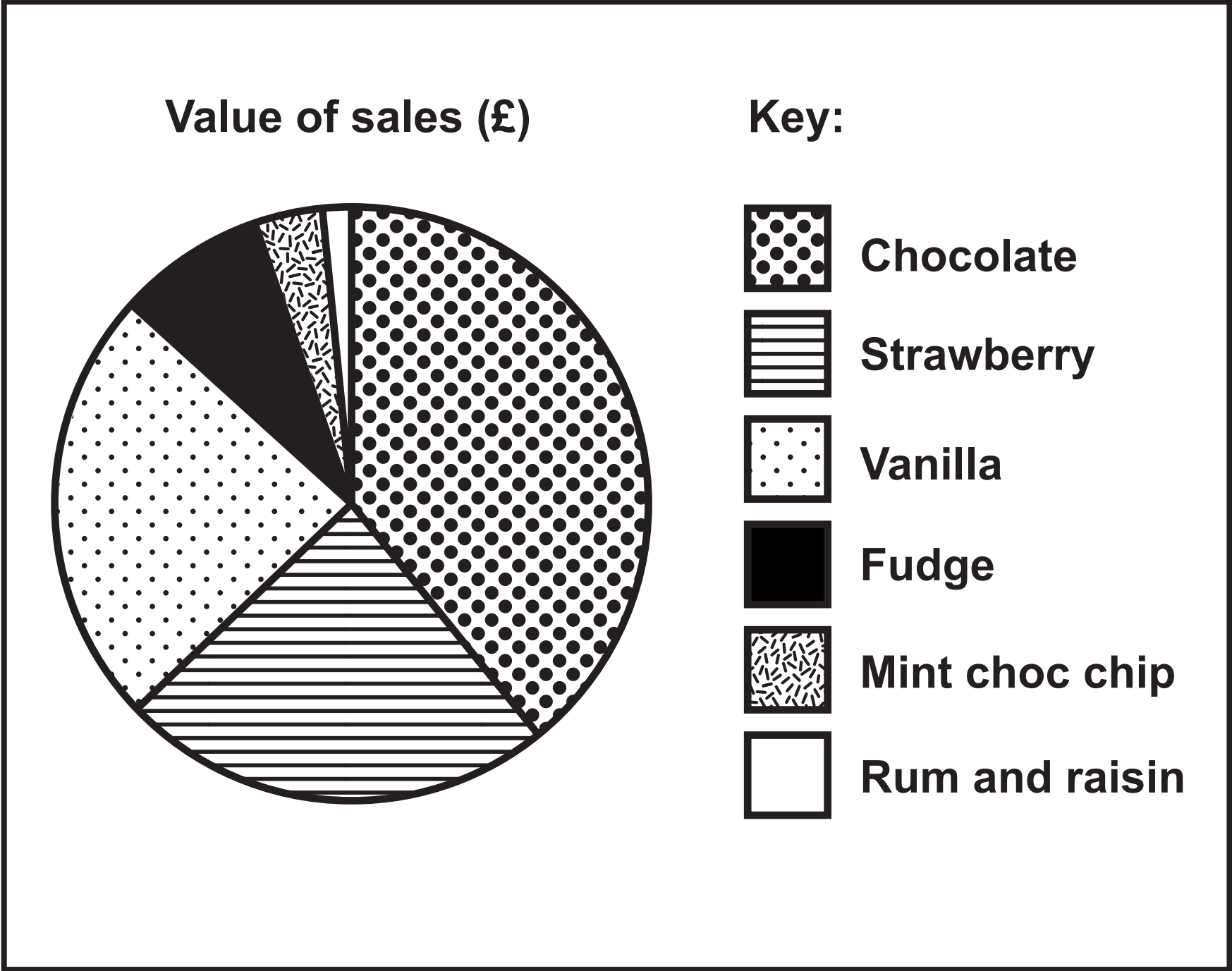


Question 18 (c) (ii)



Question 19 (a)

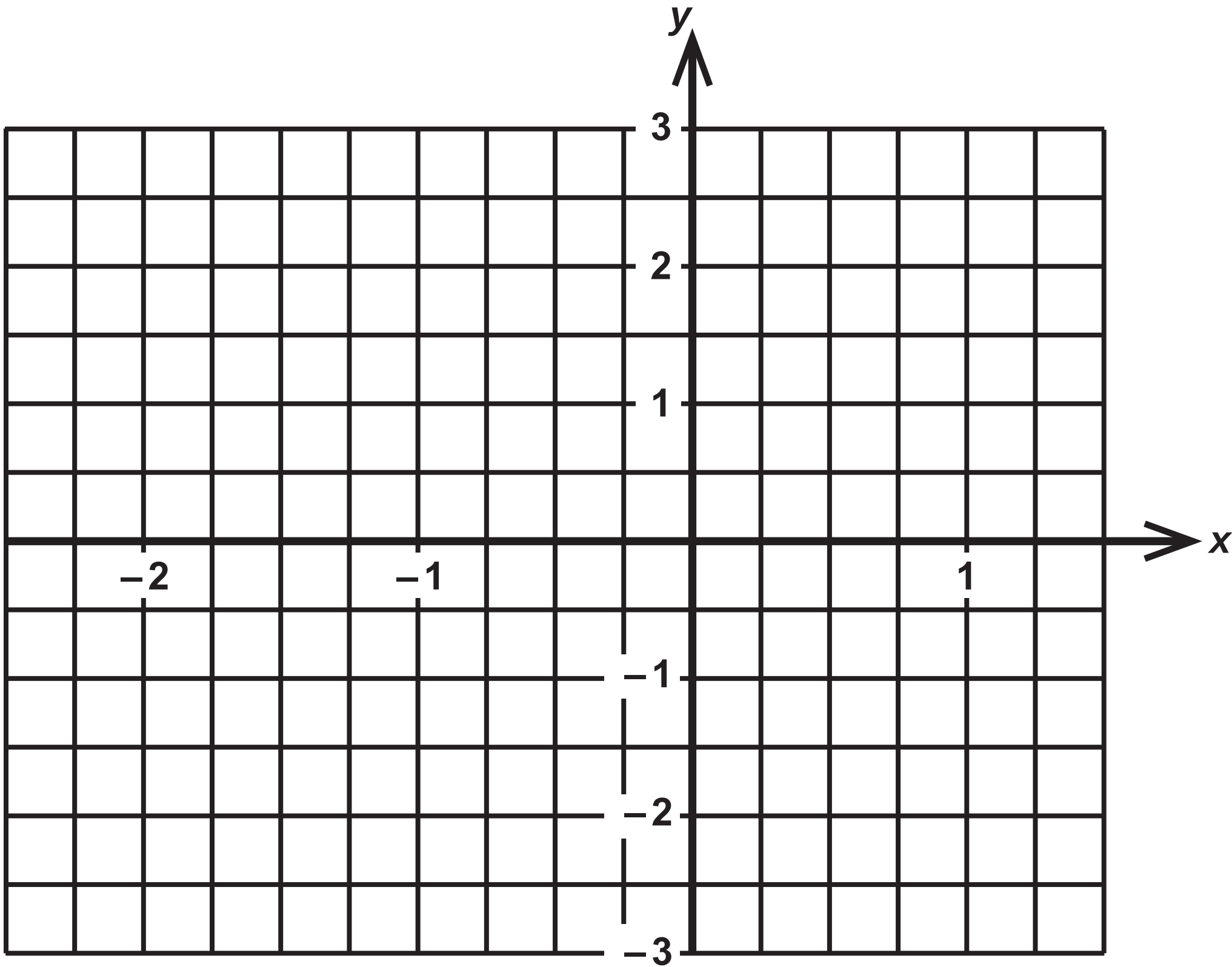
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Question 22 (b)



**FORMULA LIST
FOUNDATION TIER
AND HIGHER TIER
GCSE**

You must not write on these formula pages.

Anything you write on these formulae pages will gain NO credit.

AREA AND VOLUME FORMULAE

Where r is the radius of the sphere or cone,
 l is the slant height of a cone and
 h is the perpendicular height of a cone:

Curved surface area of a cone = $\pi r l$

Surface area of a sphere = $4\pi r^2$

Volume of a sphere = $\frac{4}{3}\pi r^3$

Volume of a cone = $\frac{1}{3}\pi r^2 h$

KINEMATICS FORMULAE

Where a is a constant acceleration,
 u is initial velocity, v is final velocity,
 s is displacement from the position
when $t = 0$ and t is time taken:

$$v = u + at$$

$$s = ut + \frac{1}{2}at^2$$

$$v^2 = u^2 + 2as$$