Rewarding Learning

General Certificate of Secondary Education
2015

Mathematics

Unit T1 **(With calculator)**
Foundation Tier

[GMT11]

GMT11

THURSDAY 21 MAY, 9.15 am–10.45 am

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in blue or black ink only. **Do not write with a gel pen**.
Answer **all twenty-eight** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
You **may** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Questions **19** and **26**.
You should have a calculator, ruler, compasses and a protractor.
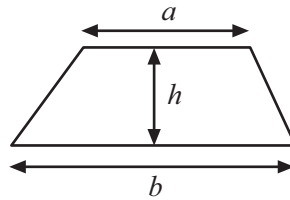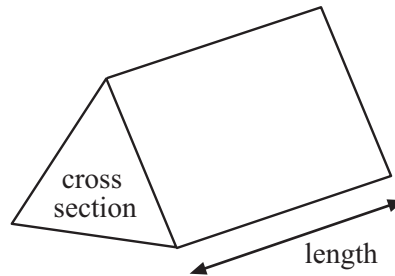The Formula Sheet is on page 2.

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Formula Sheet

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

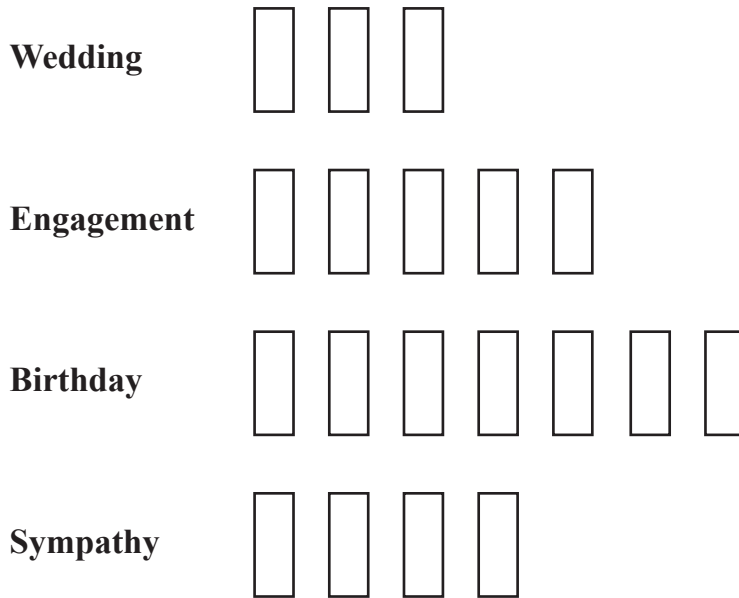**Volume of prism** = area of cross section × length

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(Questions start overleaf)

1 One day 75 cards were sold in a shop.
The first four rows of the pictogram are shown below.

Card Sales

Wedding ▯ ▯ ▯

Engagement ▯ ▯ ▯ ▯

Birthday ▯ ▯ ▯ ▯ ▯ ▯

Sympathy ▯ ▯ ▯

Baby

(a) 15 engagement cards were sold.

Complete the key: ▯ = _____ cards [1]

(b) How many sympathy cards were sold?

Answer _____ [1]

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(c) How many more birthday cards than wedding cards were sold?

Answer _____ [1]

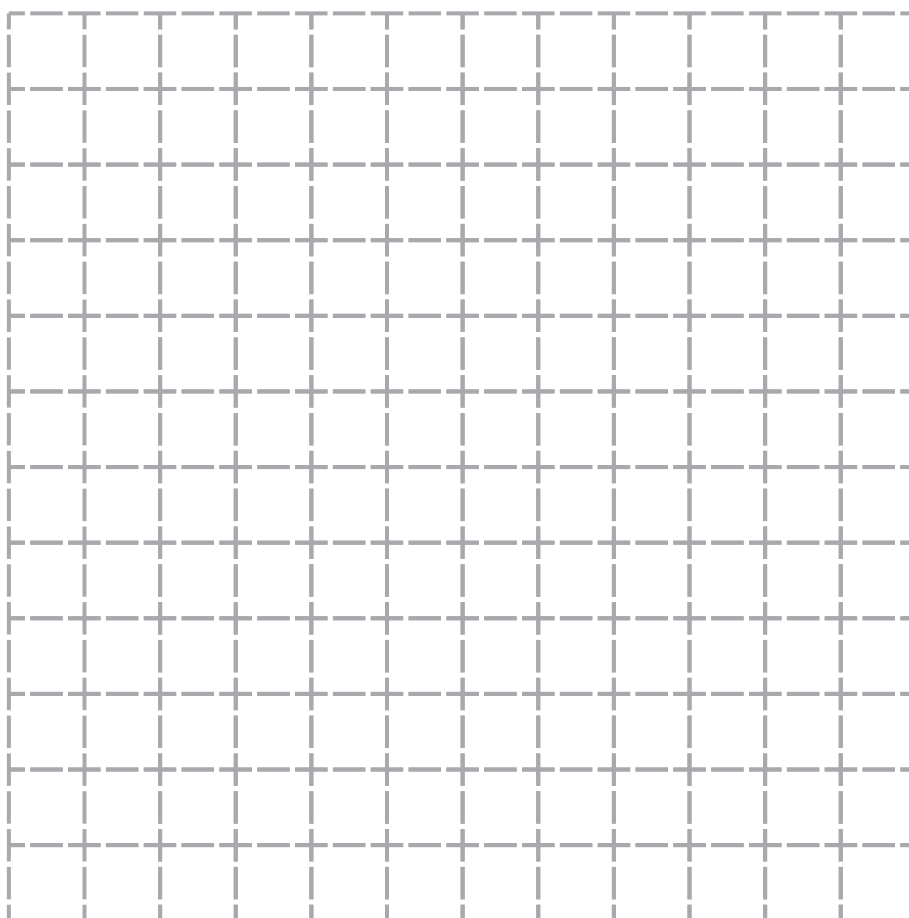**(d)** Complete the row of the pictogram for baby cards. [2]

2 Gary recorded the footwear sold in a shop one day.

Type of Footwear	Frequency
Shoes	8
Trainers	11
Sandals	7
Slippers	5
Boots	4

(a) On the graph paper, draw a bar chart to show this information.

[3]

(b) Which was the most popular type of footwear?

Answer _____ [1]

(c) What was the total footwear sold on that day?

Answer _____ [1]

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[Turn over

3

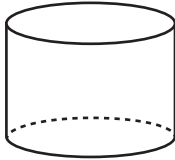|		
TRAPEZIUM	CUBE	RHOMBUS
HEXAGON	CUBOID	CYLINDER

Write down the name of the following from the list above.

(a)

_____

(b)

_____
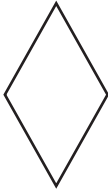
(c)

_____

(d)

_____
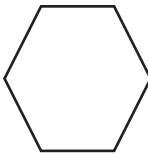
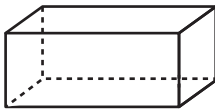[4]

4 Below is a copy of the till receipt from Teresa's grocery shopping.
Fill in the missing amounts in all the blank spaces.

2 cartons of milk at £1.66 each	£ _____
3 grapefruit at 57p each	£ _____
1 box of muesli	£3.95
4 baguettes at 85p each	£ _____
1 frozen pizza	£4.59
Total	£ _____
Amount paid	£20.00
Change	£ _____

[4]

5 The details of Jim's gas bill from April to July are as follows.

His meter reading at the start was 2368 units.

His meter reading at the end was 9745 units.

The cost of one unit of gas is 3.82 pence.

Calculate Jim's gas bill from April to July.

You must show all your working.

Answer £ ————— [4]

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6

<table>
<tr><td>

CAR PARK

Rate: 85p per hour

Please pay at machine before
returning to your car

Machine takes these coins

£2 £1 50p 20p 10p 5p

</td></tr>
</table>

(a) Marie paid £4.25 to park.
How many hours did she pay for?

Answer _____ hours [2]

(b) Marie paid exactly £4.25
She used seven coins.
Show three **different** ways she could have paid with seven coins.

Answer 1. ____ ____ ____ ____ ____ ____ ____

2. ____ ____ ____ ____ ____ ____ ____

3. ____ ____ ____ ____ ____ ____ ____   [3]

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7

| 18 | 21 | 27 | 35 | 41 | 47 | 49 | 56 | 65 |

From the above list of numbers, select

(a) a multiple of 8   Answer _____

(b) a factor of 36   Answer _____

(c) a square number   Answer _____

(d) two numbers that add to give 82

Answer _____ and _____

(e) two numbers that have a difference of 28

Answer _____ and _____ [5]
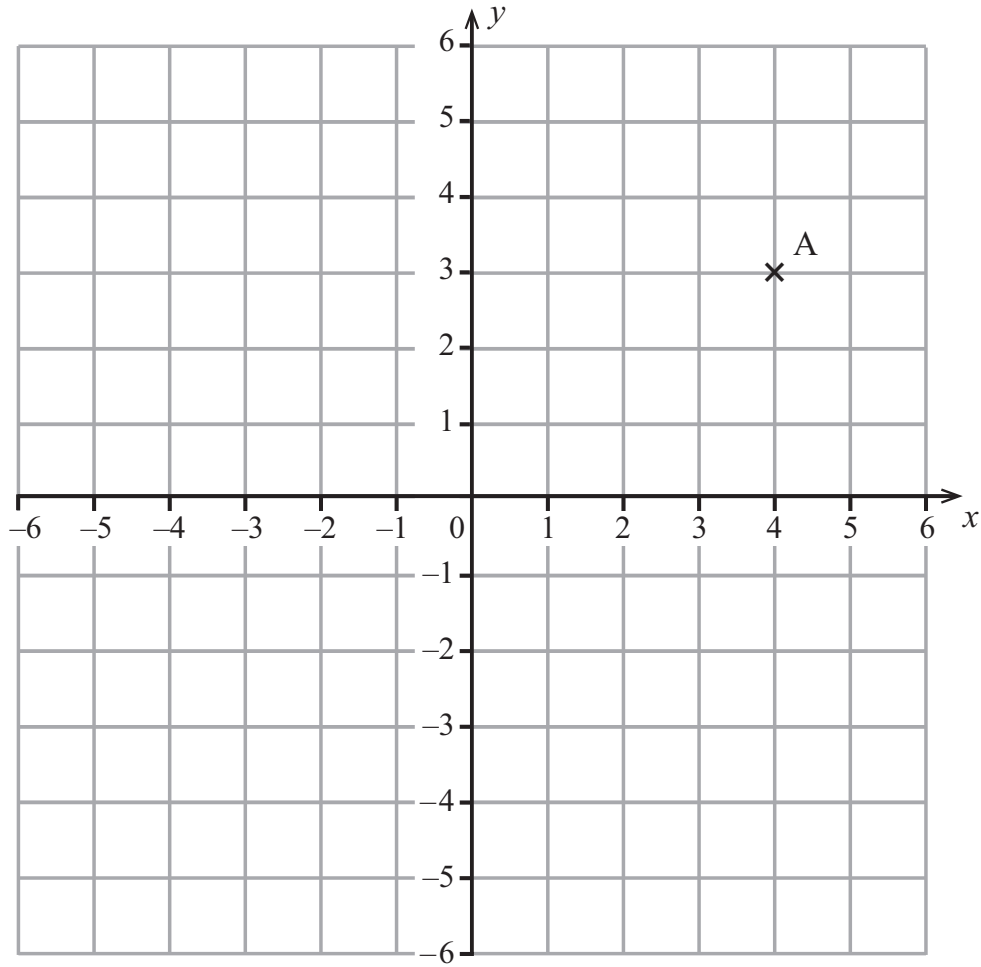
8   Which metric unit would be used for

   (a) the weight of an apple,   Answer _____ [1]

   (b) the length of a football pitch,   Answer _____ [1]

   (c) the amount of water in a bath?   Answer _____ [1]

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9

(a) Write down the coordinates of the point **A**.

Answer **A** (_____, _____) [1]

(b) On the grid plot and label the points **B** (−4, 0) and **C** (3, −5). [2]

10 In the triangle ABC the length of side AB is 6 cm.

The angle at A is 54° and the angle at B is 80°
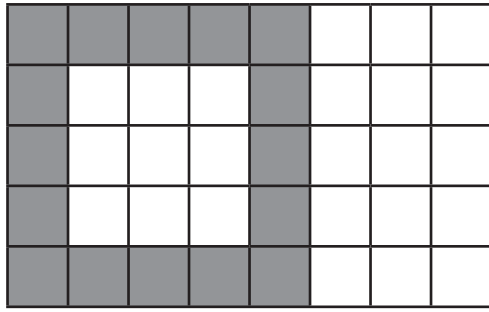
(a) Draw this triangle accurately.

A^×

[3]

(b) From your completed triangle measure the length of side BC.

Answer BC = _____ cm [1]

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11

The shape above is made up of squares of equal size.
Some are shaded and some are not shaded.

(a) What fraction of the shape is shaded?
Give your answer in its simplest form.

Answer ⎯⎯⎯⎯⎯⎯⎯ [2]

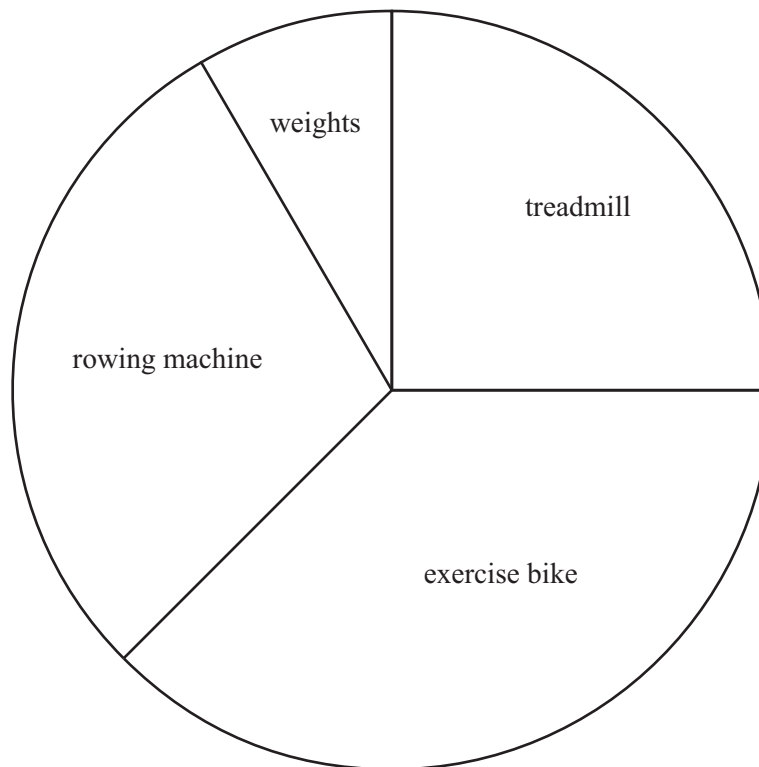**(b)** What percentage is **not** shaded?

Answer ⎯⎯⎯⎯⎯% [2]

[Turn over

12 George spent two hours at the gym one evening.

The pie chart shows how the time was spent on four activities.

(a) How much time did George spend on the treadmill?

Answer _____ [1]

(b) Roughly what amount of time was spent on the exercise bike?

Answer _____ [1]

(c) Measure the angle for rowing machine.

Answer _____° [1]

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13 The number of phone calls each hour in a health centre is shown below.

<div align="center">38   21   25   19   24   18   22   27   26   20</div>

(a) What was the mean number of phone calls?

Answer ——————— [3]

(b) What was the median number of phone calls?

Answer ——————— [2]
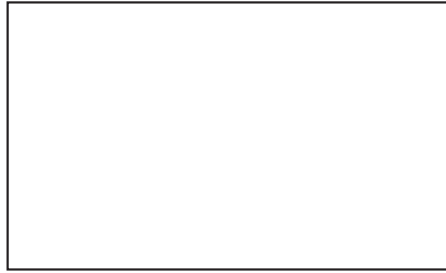
[Turn over

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14

6 cm

5 cm

Diagram not drawn accurately

Work out

(a) the perimeter of this rectangle,

Answer _____ cm [1]

(b) the area of this rectangle.

Answer _____ cm^2 [2]

15 The cost of 43 litres of petrol is £59.77
Work out the cost of one litre of petrol.

Answer £ _____ [2]

16 At midday the temperature in Minsk was –12°C.
By midnight the temperature had fallen by 9°C.
What was the temperature in Minsk at midnight?

Answer _____°C [1]

17 (a) Simplify $h + h + h - h - h + h$

Answer _____ [1]

(b) Solve $x - 5 = 13$

Answer $x =$ _____ [1]

(c) Ryan says that $8x + 2x - 10$ is an equation.
Is he correct? Explain your answer.

Answer _____ because _____

_____ [1]

18 Write down the value of

(a) 4^3 Answer _____ [1]

(b) $\sqrt{2.25}$ Answer _____ [1]

[Turn over

Quality of written communication will be assessed in this question.

19 Amy, Bronagh and Ciara did a Maths test in school.
The total for the test was 80 marks.

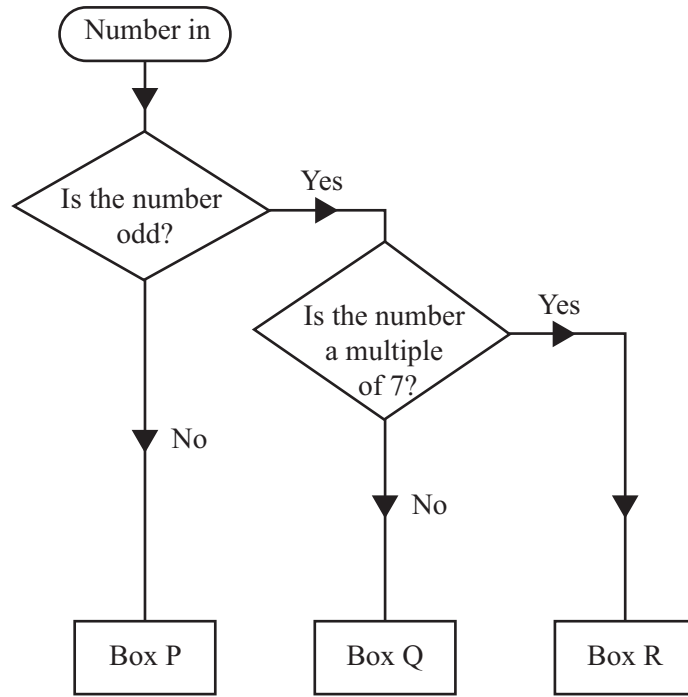Amy got 50 marks out of 80
Bronagh got 65%
Ciara got $\frac{3}{5}$ of the 80 marks.

Who got the highest mark?
You must show all your working.

Answer _____ [4]

20

Using the decision tree diagram, name the box for

(a) 25   Answer Box _____
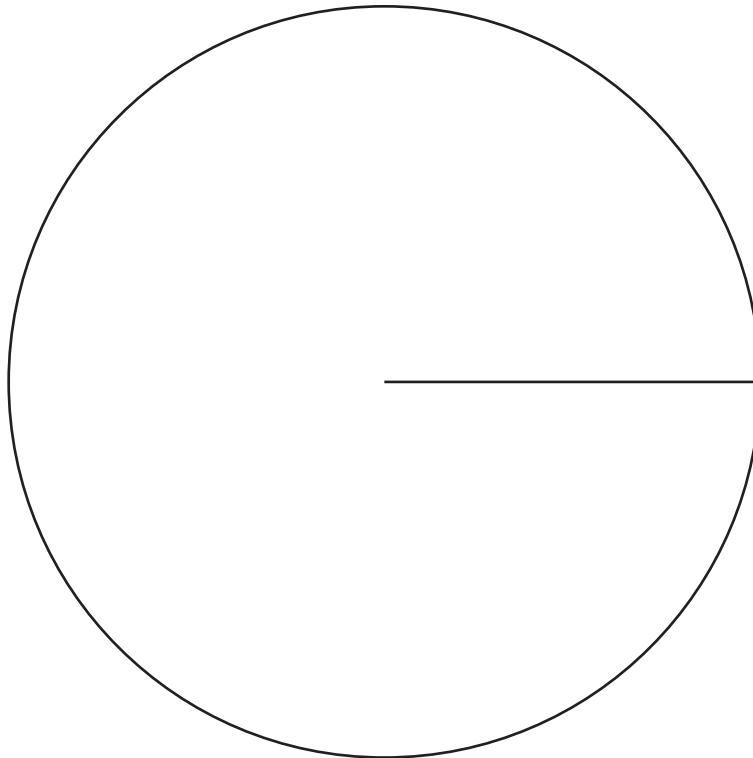
(b) 22   Answer Box _____

(c) 21   Answer Box _____ [2]

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21 The amount of fruit sold in a canteen was recorded as follows.

Fruit	Frequency	Angle
Oranges	30	
Apples	42	
Pears	23	
Bananas	25	

Draw a pie chart to illustrate this information.

[4]

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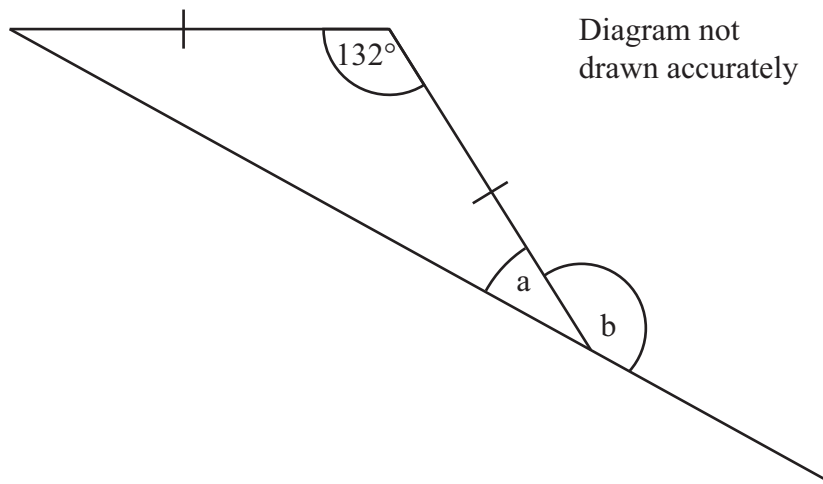**22** Write down the next two terms in the following sequence

  18, 17, 14, 9, _____ , _____   [2]

23 Simplify $4a + 3b - a - 5b$

                              Answer _____ [2]

24

Diagram not drawn accurately

132°

a

b

Find the size of

(a) angle a

                              Answer a = _____ ° [2]

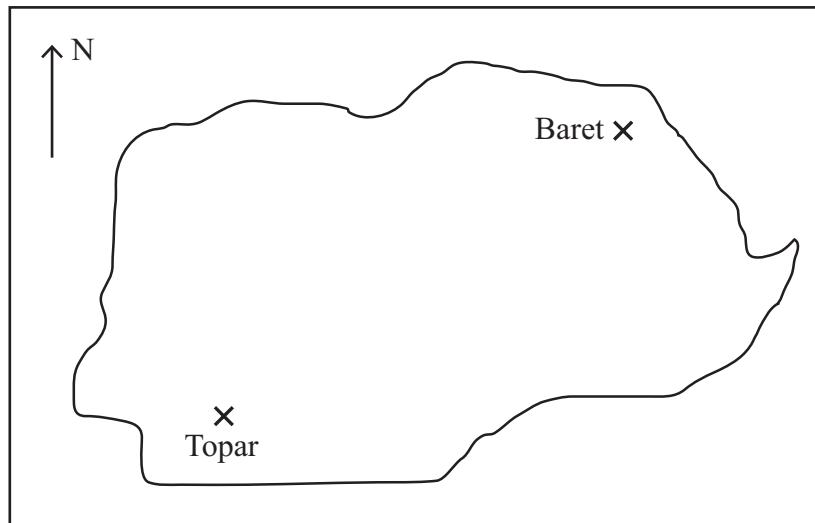**(b)** angle b

                              Answer b = _____ ° [1]

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25

In the map above the scale is   1 cm = 60 km.

Find the actual distance between Baret and Topar.

Answer _____ km [3]

Quality of written communication will be assessed in this question.

26 Tom works 30 hours each week.
He earns £9.50 per hour.
He saves one-fifth of his earnings each week.
He wants to buy a guitar costing £840
How many weeks does it take Tom to save enough to buy the guitar?
You must show all your working.

Answer ——————— weeks [5]

27 The total cost of 4 kg of pears and 3 kg of bananas is £14.55
Pears cost £2.55 per kg.
Work out the cost of 1 kg of bananas.

Answer £ _____ [4]

28 A company makes 500 rag dolls.
It costs £3.14 to make each rag doll.
25% of the rag dolls are given to a local charity.
Of the rest, four-fifths are sold for the full price of £5
The remainder are then sold at half-price.
How much profit does the company make?

Answer £ _____ [6]

_____

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