OCR
Oxford Cambridge and RSA

F

Wednesday 4 November 2015 – Morning

GCSE MATHEMATICS B
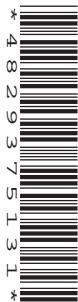
J567/01   Paper 1 (Foundation Tier)

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
* Geometrical instruments
* Tracing paper (optional)

Duration: 1 hour 30 minutes

J56701

Candidate forename		Candidate surname	

Centre number						Candidate number					

INSTRUCTIONS TO CANDIDATES

* Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
* Use black ink. HB pencil may be used for graphs and diagrams only.
* Answer **all** the questions.
* Read each question carefully. Make sure you know what you have to do before starting your answer.
* Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.
* Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
* Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

* The number of marks is given in brackets **[ ]** at the end of each question or part question.
* The quality of written communication is assessed in questions marked with an asterisk (*).
* The total number of marks for this paper is **100**.
* This document consists of **24** pages. Any blank pages are indicated.

WARNING

No calculator can be used for this paper
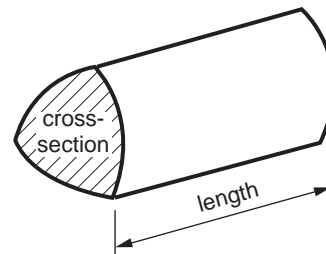
OCR is an exempt Charity

Turn over

2

Formulae Sheet: Foundation Tier

Area of trapezium = $\frac{1}{2}(a + b)h$
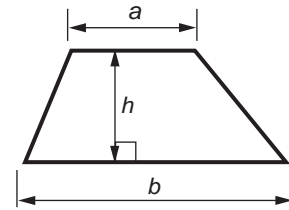
Volume of prism = (area of cross-section) × length

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3

Answer **all** the questions.

1 Work out.

   (a) **(i)** 34×100

                                              (a)(i) .... **[1]**

      (ii) $456 + 572$

                                                (ii) .... **[1]**

      (iii) $57.6 - 26.2$

                                                  (iii) .... **[1]**

      (iv) $72.6 \div 3$

                                                  (iv) .... **[1]**

      (v) $^-5 + 2$

                                                  (v) .... **[1]**

   (b) 40% of 840

                                                (b) .... **[2]**

Turn over

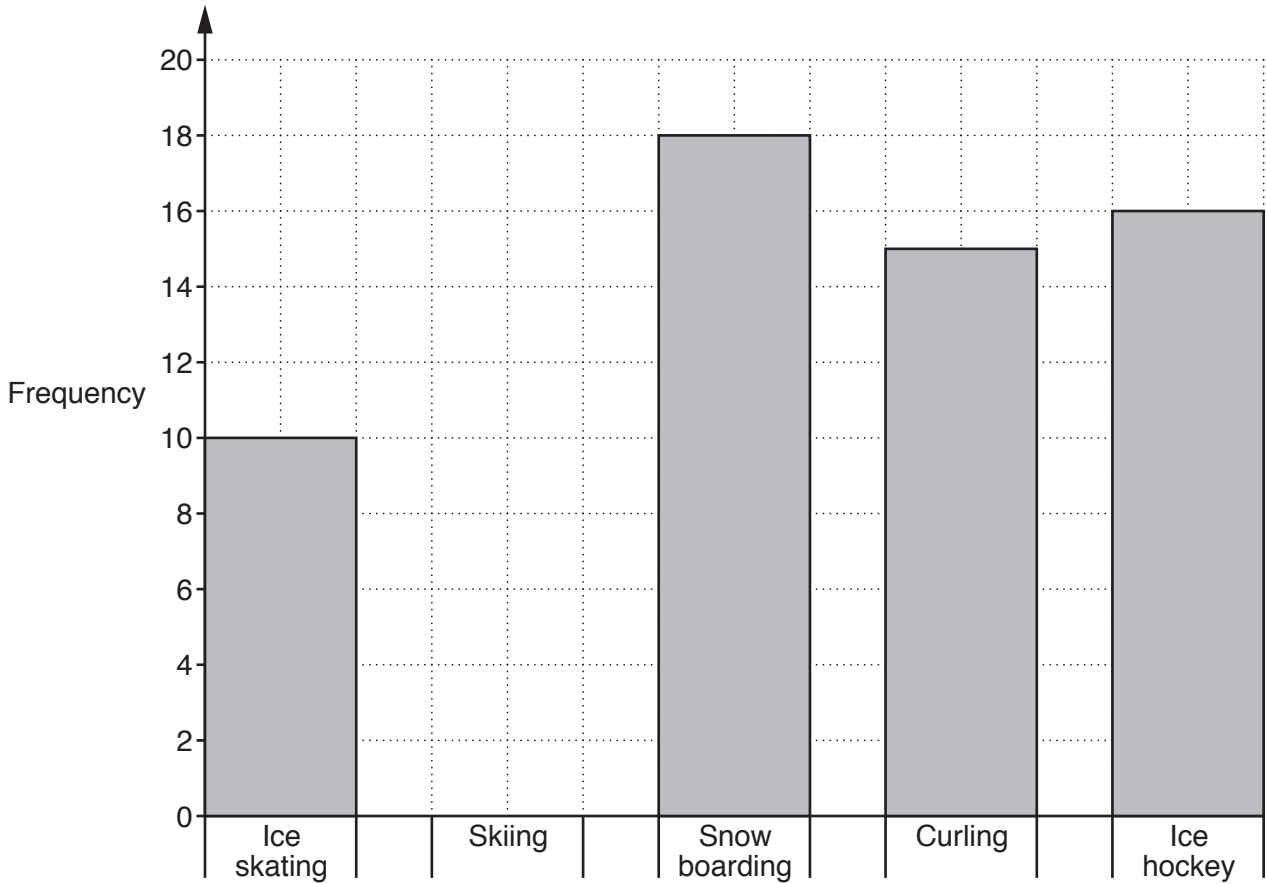**2** Vladimir asked 70 people what was their favourite sport from the Winter Olympics.

He recorded his results on the bar chart below.

(a) How many people answered Ice skating?

(a) .... **[1]**

(b) The rest of the 70 people answered Skiing.

Show this on the bar chart. **[2]**

(c) What was the most popular sport?

(c) .... **[1]**

(d) How many **more** people answered Curling than Ice skating?

(d) .... **[2]**

3 Points A and C are plotted on a coordinate grid.
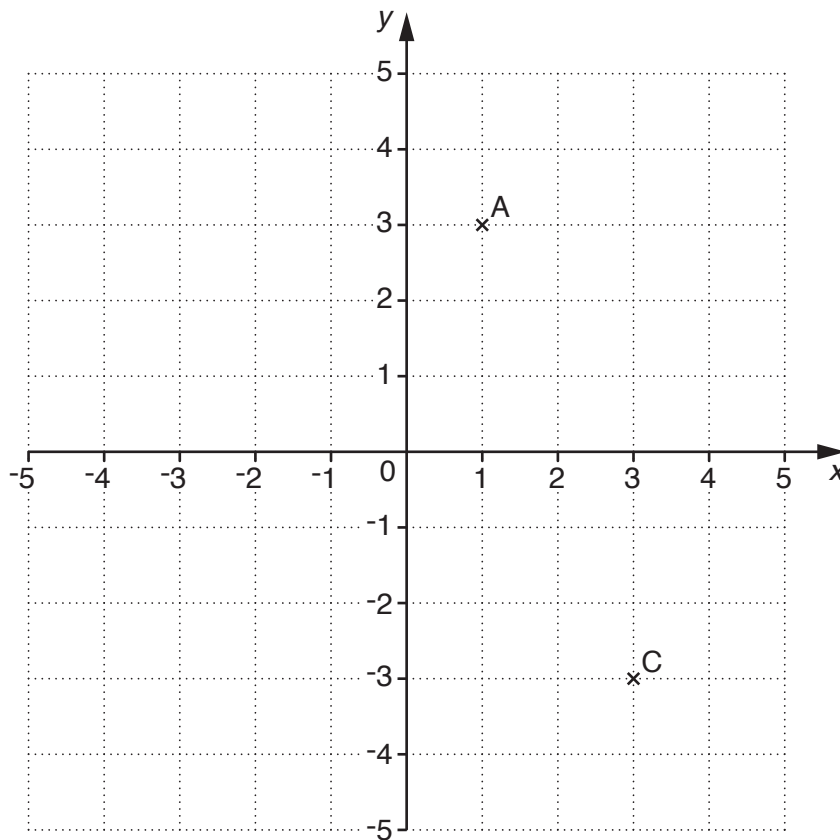
(a) Write down the coordinates of point A.

(a) (........................ , ...) **[1]**

(b) On the grid, plot point B at (⁻4, ⁻3). **[1]**

(c) What is the mathematical name of triangle ABC?

(c) .... **[1]**

4 (a) Write $\frac{4}{5}$ as a decimal.

(a) .... **[1]**

(b) Write 0.06 as a percentage.

(b) .... % **[1]**

5 **(a)** Measure the size of angle *x*.
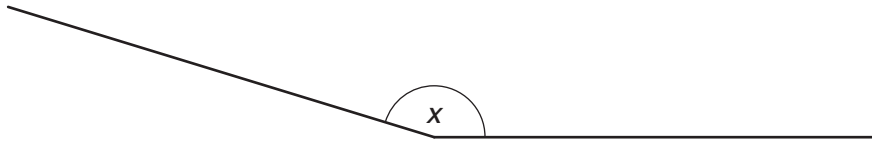
(a) .... ° **[1]**

(b) What is the mathematical name of this type of angle?

(b) .... **[1]**

(c) Work out the angles below. Give a reason for each answer.

(i)

Not to scale
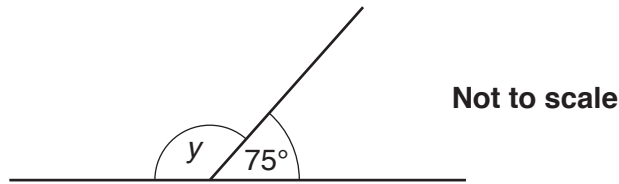
Angle *y* is ....° because ....

.... **[2]**

(ii)

Not to scale
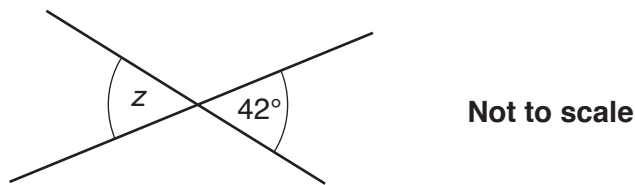
Angle *z* is ....° because ....

.... **[2]**

7

6 Ten cards numbered 1 to 10 are placed face down.
One card is chosen without looking.

> evens unlikely impossible
>
> certain likely
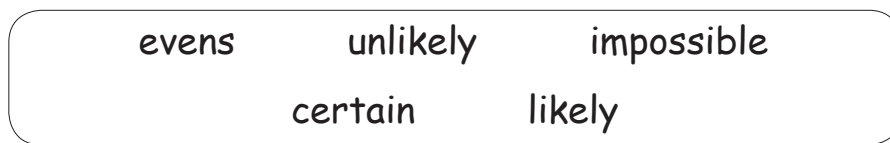
Choose a word from the box above to complete each of the following sentences.

(a) It is .... that it will have a number less than 4 on it. **[1]**

(b) It is .... that it will have a number less than 12 on it. **[1]**

7 (a) The temperature in George's garden at 3 pm was 8 °C.
By 4 am the temperature had fallen 14 °C.

What was the temperature at 4 am?

(a) .... °C **[1]**

(b) One night the temperature in Helsinki was 2 °C.
In Whitehorse the temperature was ⁻9 °C.

How much warmer was Helsinki than Whitehorse?

(b) .... °C **[1]**

Turn over

8 Louise has to mark 3 books, A, B and C.

Complete the table to show the order in which she could mark the books.

First	Second	Third
A	B	C

[2]

9 (a) Solve.

(i) $w + 7 = 32$

(a)(i) $w =$ .... [1]

(ii) $5x = 45$

(ii) $x =$ .... [1]

(b) Simplify.

$5r + 7s + 3r - 10s$

(b) .... [2]

10 (a) The table shows part of a bus timetable from Owl Town to Shropton.

Owl Town	08 40	08 55	09 10	09 25	09 40
Leeville	08 48	09 03	09 17	09 36	09 49
Library	08 58	09 12	09 27	09 48	09 59
Rose Way	09 04	09 18	09 33	09 54	10 06
Station	09 19	09 32	09 47	10 08	10 20
Shropton	09 26	09 39	09 55	10 15	10 28

(i) How long does the 09 10 bus from Owl Town take to travel to Rose Way?

(a)(i) .... minutes **[1]**

(ii) Jo has to be at the station by 09 54.

What is the latest time she can catch a bus from Leeville?

(ii) .... **[1]**

(b) (i) Elise arrives in Shropton at 09 26.
It takes her 15 minutes to walk to work.

What time does she arrive at work?

(b)(i) .... **[1]**

(ii) Elise starts work at 09 50 and finishes at 14 30.

How long is Elise at work?

(ii).................. hours .... minutes **[2]**

Turn over

11 (a) Sam travelled 240 km in France.

He uses the following formula to convert kilometres to miles.

> Divide by 8 then multiply by 5.

How many miles did Sam travel?

(a) .... miles **[2]**

(b) Work out the value of $4a - 6b$ when $a = 12$ and $b = 3$.

(b) .... **[2]**

12 Roger sees the same holiday advertised by two different travel companies.

| OCR Travel	Sail Away
£900 per person	£960 per person
Book online save 10%	Book online save 5%
Car parking £80 per car	Free Parking

Roger is going to book this holiday online for himself and his wife.

They will travel together by car. Which is the cheaper company for their holiday and by how much?

.... is cheaper by .... **[5]**

Turn over

13 (a) An isosceles triangle is drawn below.

Not to scale

14 cm

10 cm
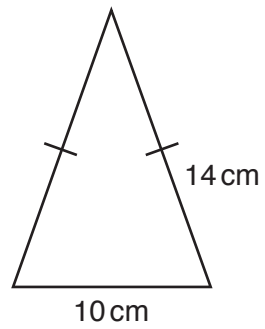
Work out the perimeter of the triangle.

(a) .... cm **[2]**

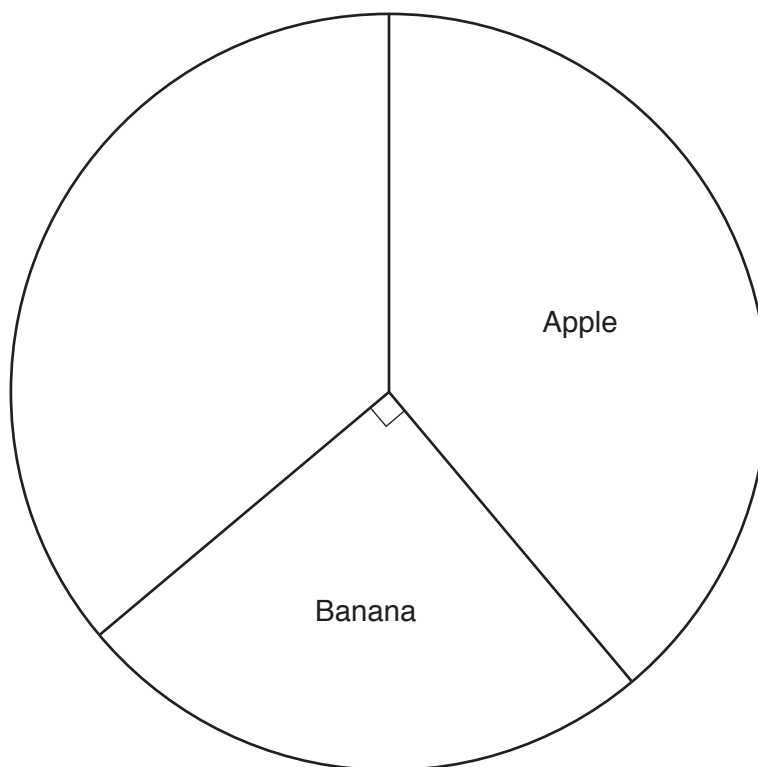**(b)** A square and a rectangle are drawn below.

8 cm

Area =
36 cm²

w

Not to scale
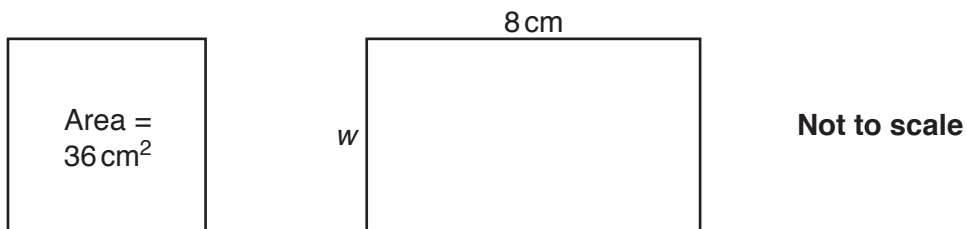
The width, *w* cm, of the rectangle is the same as the length of a side of the square.

Work out the area of the rectangle.

(b) .... cm² **[3]**

14 Jim asked 180 people to name their favourite fruit.
    He started to draw a pie chart to show the results.

Here are the rest of Jim's results.

Favourite fruit	Number of people
Pear	16
Grapes	30
Other	19

(a) Complete the pie chart.

[3]

(b) How many people chose Banana as their favourite fruit?

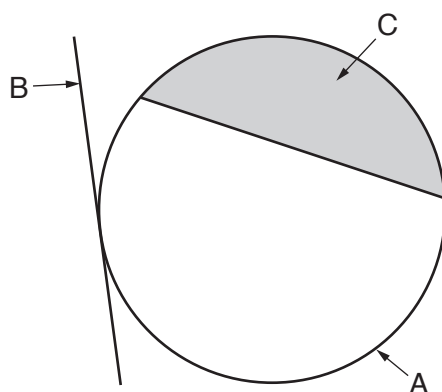(b) .... [1]

15* Leo has a bag containing red, yellow, blue and green counters.
Leo thinks he knows the probability of choosing a counter of each colour from the bag without looking.
He writes the probabilities in this table.

Red	Yellow	Blue	Green
$\dfrac{1}{12}$	$\dfrac{1}{4}$	$\dfrac{1}{3}$	$\dfrac{5}{12}$

Explain how you know Leo must have made a mistake in his table.

.... **[5]**

16 (a) Here is a circle.

Write down the mathematical name of

(i) A,

(a)(i) .... **[1]**

(ii) B,

(ii) .... **[1]**

(iii) C.

(iii) .... **[1]**

(b) The radius of another circle is 4 cm.

Calculate the area of this circle, leaving your answer in terms of π.

(b) .... cm^2 **[2]**

17 **(a)** Multiply out the brackets.

$$10(2x + 5)$$

(a) .... **[1]**

(b) Solve.

$$5x - 7 = 3x + 16$$

(b) $x =$ .... **[3]**

18 The diagram shows two triangles on a square grid.
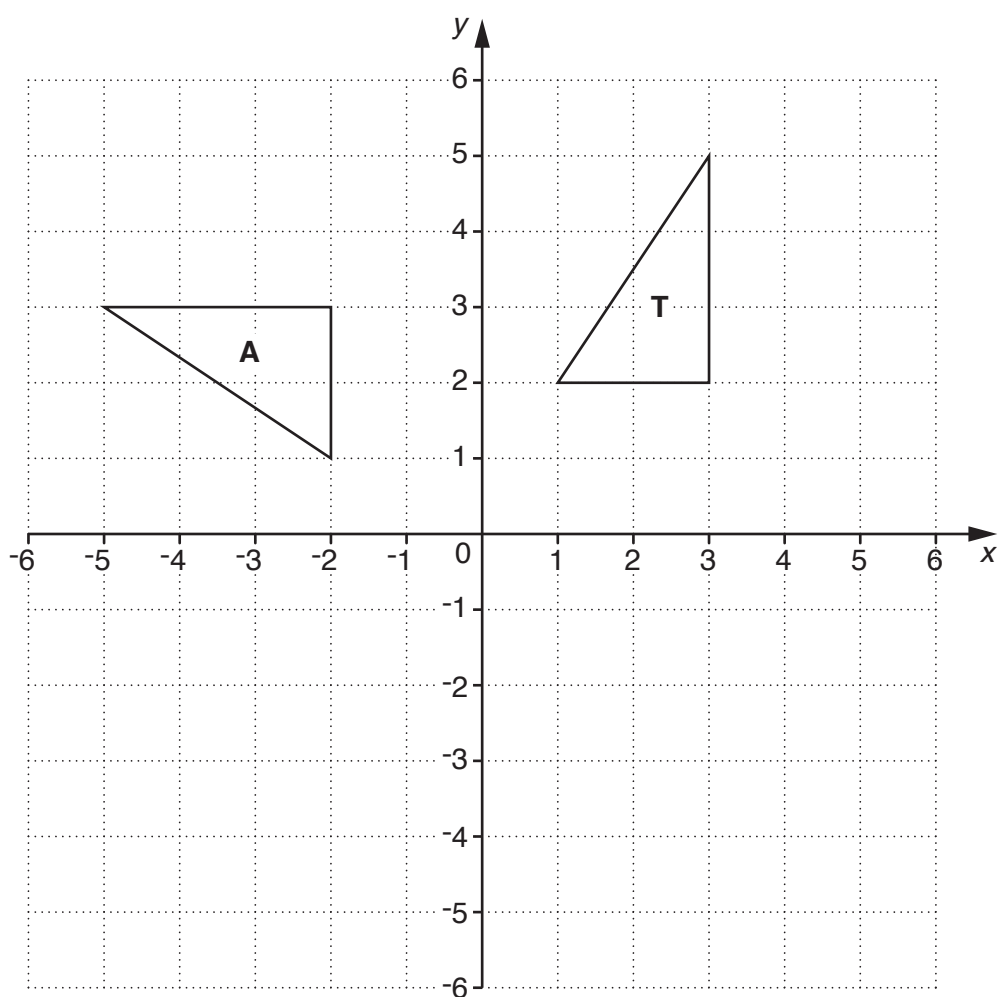
(a) Translate triangle **T** by the vector $\begin{pmatrix} 2 \\ -4 \end{pmatrix}$.

Label the image **P**. **[2]**

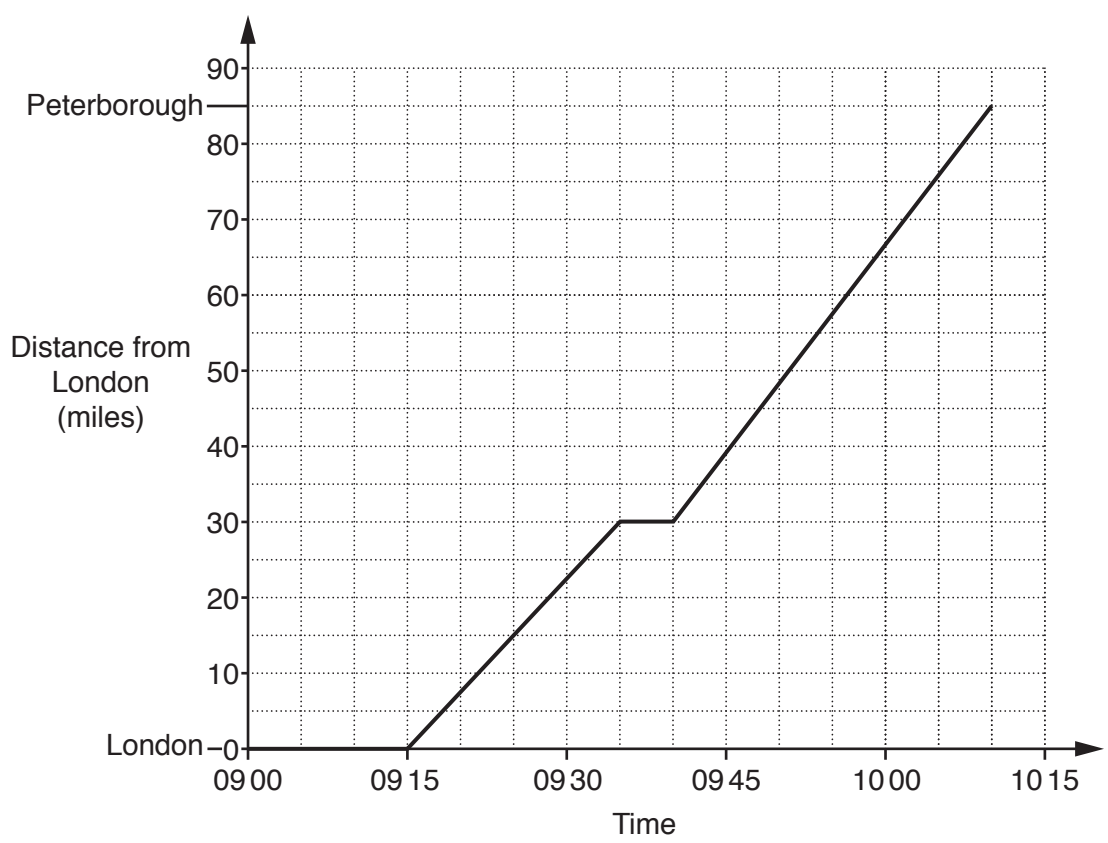**(b)** Rotate triangle **T** through 180° about centre (‑1, 0).

Label the image **R**. **[2]**

(c) Describe the **single** transformation that maps triangle **T** onto triangle **A**.

.... **[3]**

Turn over

19 The graph shows the journey of a train from London to Peterborough.
On the journey the train makes a stop at Stevenage.

Use the graph to answer these questions.

(a) What time does the train arrive at Stevenage?

(a) .... **[1]**

(b) Work out the average speed of the train between Stevenage and Peterborough.
Give your answer in miles per hour.

(b) .... mph **[2]**

20 **(a)** Here are the first four terms of a sequence.

$$33 \quad 27 \quad 21 \quad 15$$

What is the next term in the sequence?
Explain how you worked it out.

.... because ....

.... **[2]**

(b) Here are the first four terms of another sequence.

$$12 \quad 19 \quad 26 \quad 33$$

Write an expression for the nth term of the sequence.

(b) .... **[2]**

21 The table is part of the final medal table from the 2014 Winter Olympics.

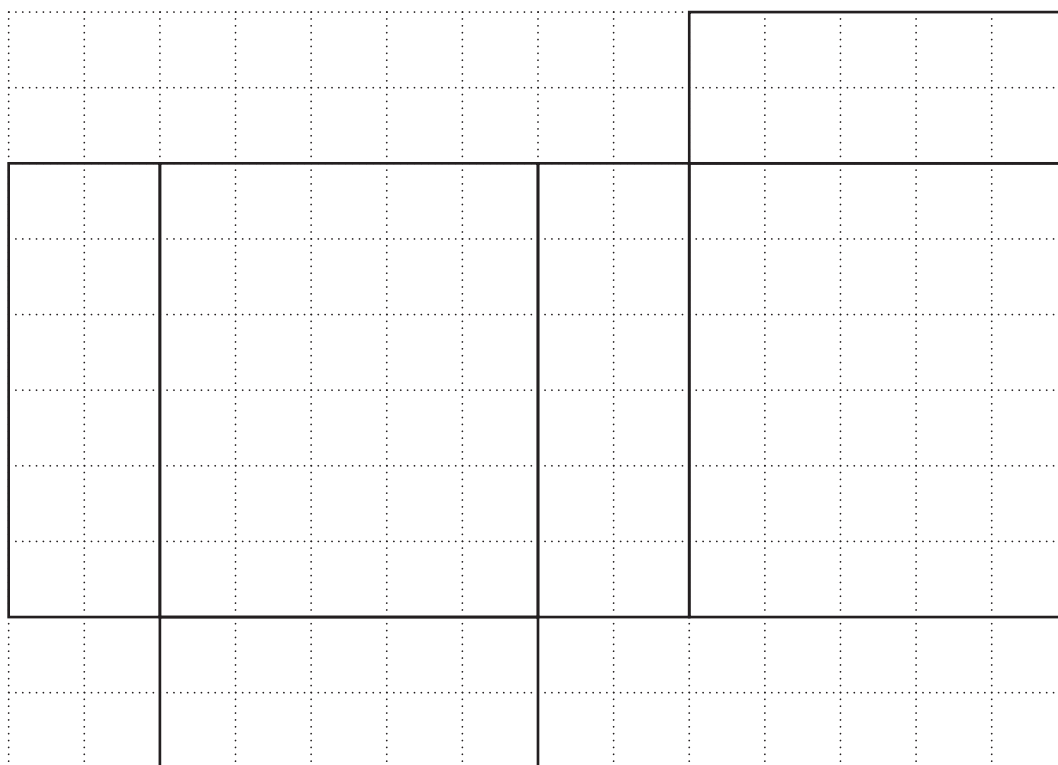Use the information below to complete the table.

- Norway won twice as many bronze medals as silver medals.

- The medals won by Italy were in the ratio Silver : Bronze = 1 : 3.

Country	Gold	Silver	Bronze	Total
Norway	11	5	10	26
Italy	0	2	6	8

[4]

22 A net of a cuboid is drawn on a one-centimetre square grid.

Work out the volume of the cuboid.
Give the units of your answer.

.... **[3]**

Turn over

23 Mustafa carries out a consumer survey in his town.

(a) He wants to find out the ages of the people in his survey.

Criticise each of the following two questions.

(i)

> How old are you?
>
> Write your age in the box.   Age = [   ]

....

.... **[1]**

(ii)

> What is your age?
> Put a tick in the correct box.
>
> [ ] 0–20   [ ] 20–40   [ ] 40–60   [ ] over 60

....

.... **[1]**

(b) Mustafa wants to find out how many pints of milk each household buys in a week.

Write a question he could use and include suitable option boxes.
Use 20 pints as the maximum number in a week.   **[2]**

24 In the table there are five statements.

The statements are true for some numbers and false for other numbers.

For each statement give an example for which it is true and an example for which it is false.
Choose numbers which are between 0 and 20.
The first one has been done for you.

Statement	True	False
Prime numbers are odd.	5	2
The square of a number is larger than the number.	....	....
The highest common factor (HCF) of **two numbers** is smaller than both numbers.	.... and	.... and ....
A number has an even number of factors.	....	....
The reciprocal of a number is smaller than the number.	....	....

[4]

END OF QUESTION PAPER

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