

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

B273B

**MATHEMATICS C
(GRADUATED ASSESSMENT)**

MODULE M3 – SECTION B

THURSDAY 20 JANUARY 2011: Morning

DURATION: 30 minutes

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the question paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments

Tracing paper (optional)

Electronic calculator

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

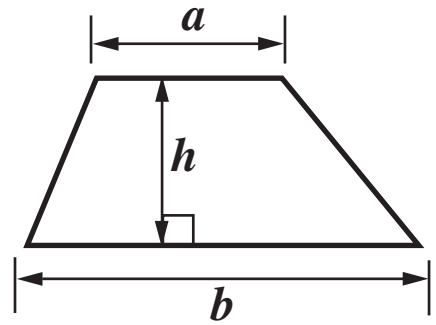
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Show your 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).**
- **Answer ALL the questions.**

INFORMATION FOR CANDIDATES

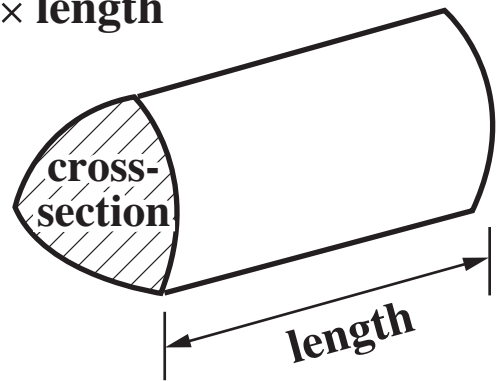
- **The number of marks is given in brackets [] at the end of each question or part question.**
- **Section B starts with question 6.**
- **You are expected to use a calculator in Section B of this paper.**
- **The total number of marks for this Section is 25.**

FORMULAE SHEET

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



Volume of prism = (area of cross-section) \times length



6 Calculate.

(a) $\frac{1}{8}$ of 76

(a) _____ [1]

(b) $\sqrt{225}$

(b) _____ [1]

(c) $12^2 - 8^2$

(c) _____ [2]

7 Choose a word from the box to complete the following sentences.

centimetres grams metres
kilograms kilometres

(a) It is about 270 _____ from Sheffield to London. [1]

(b) An adult is about 1·7 _____ tall. [1]

- 8 This table shows the number of Gold medals won by the top 5 countries at the 2008 Olympic Games.**

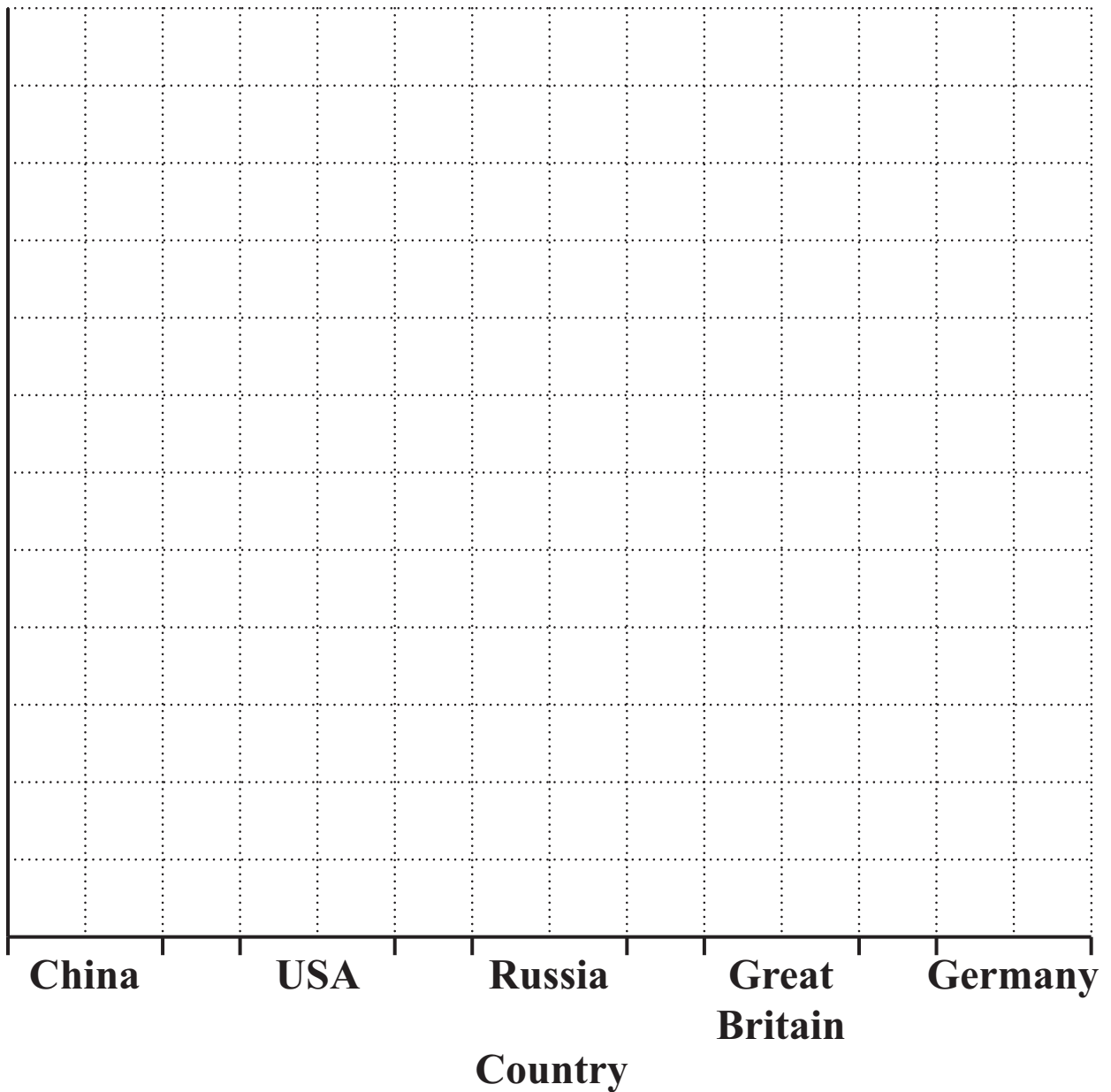
Country	Number of Gold medals
China	51
USA	36
Russia	23
Great Britain	19
Germany	15

- (a) How many more Gold medals did China win than Germany?**

(a) _____ [1]

(b) Draw a bar chart to show the number of Gold medals won.

Number of Gold medals won



[3]

(c) France won 40 medals altogether.

$\frac{2}{5}$ of these medals were Silver.

How many Silver medals did France win?

(c) _____ [2]

**(d) The men's cross-country cycle race started at 1010.
The winner finished at 1206.**

How long did the winner take to complete the race?

(d) _____ hours _____ minutes [1]

- 9 Andrew works in a café.
His wage is worked out using this formula.

$$\text{Wage} = \text{Number of hours worked} \times \text{Pay per hour} + \text{Tips}$$

One week Andrew works 30 hours.
He is paid £6.50 per hour.
His tips are £12.74.

Calculate Andrew's wage for the week.

£ _____ [2]

- 10 (a) Canals have locks on them.
The time taken to travel through a flight of locks is worked out using this formula.**

$$T = N \times 18$$

**T is the time in minutes,
 N is the number of locks in the flight.**

- (i) Use the formula to work out how long a boat takes to travel through a flight of 8 locks.**

(a)(i) _____ minutes [1]

- (ii) The boat takes 270 minutes to travel through another flight of locks.**

How many locks are in this flight?

(ii) _____ [1]

- (b) Rebecca hired a canal boat for 8 days.
She recorded the number of hours she travelled each day.**

12 8 7 6 13 11 10 9

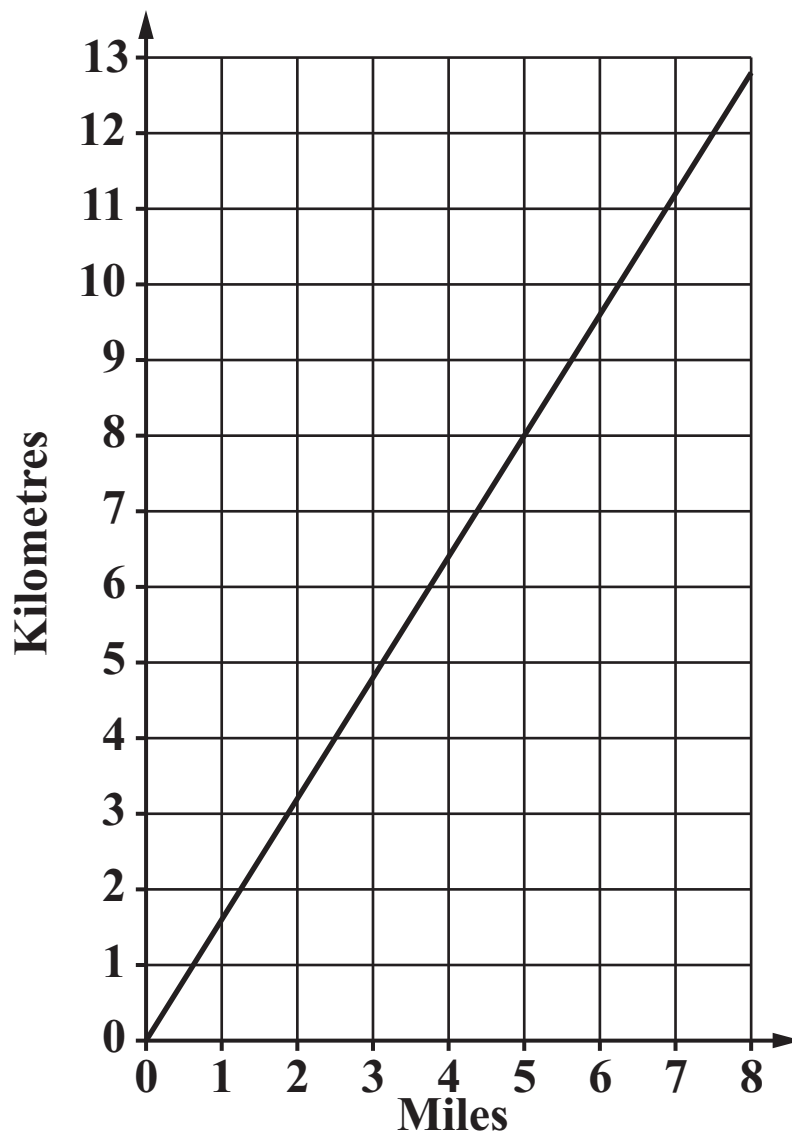
- (i) Work out the mean number of hours she travelled.**

(b)(i) _____ [3]

- (ii) Work out the range.**

(ii) _____ [1]

(c) Rebecca uses this graph to convert between miles and kilometres.



(i) A canal boat travels 4 miles.

Use the graph to find how many kilometres are equal to 4 miles.

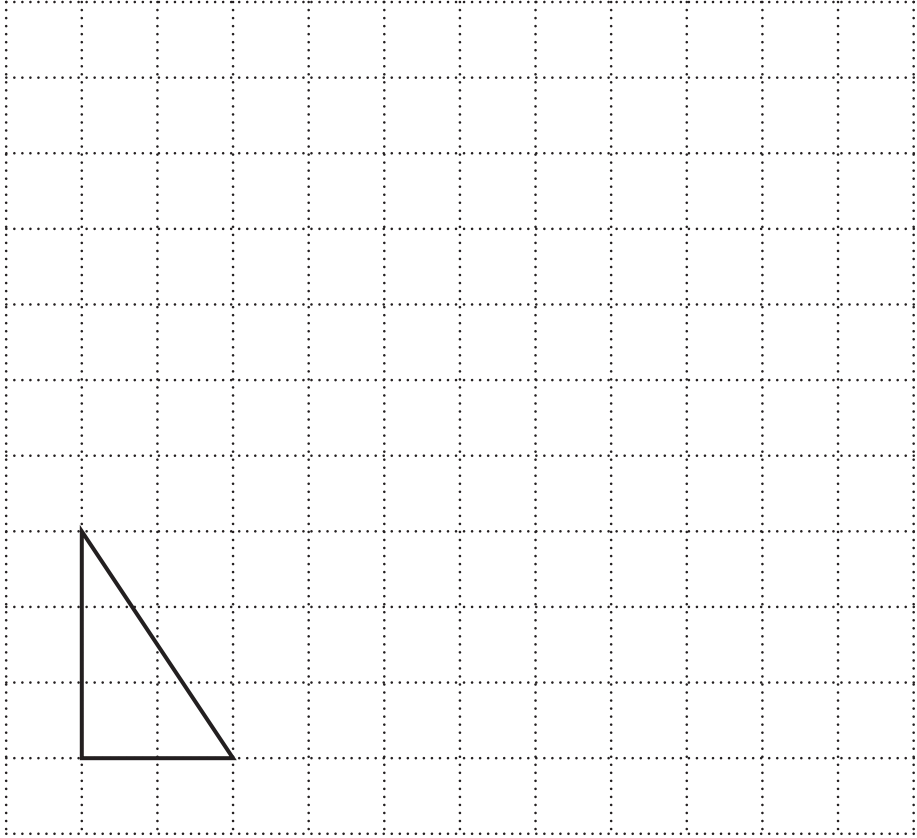
(c)(i) _____ km [1]

- (ii) Explain how you could use the graph to work out how many kilometres are equal to 14 miles.**

[1]

TURN OVER FOR QUESTION 11

11 Draw an enlargement of this shape with scale factor 3.



[2]

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