Candidate Forename		Candidate Surname	

Centre Number						Candidate Number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B281A

MATHEMATICS C (GRADUATED ASSESSMENT)

TERMINAL PAPER – SECTION A (Foundation Tier)

FRIDAY 15 JANUARY 2010: Morning
DURATION: 1 hour

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the Question Paper

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments
Pie chart scale (optional)
Tracing paper (optional)

WARNING
No calculator can be used for Section A of this paper.

READ INSTRUCTIONS OVERLEAF

DC (LEO/CGW) MEP10114 23551/1

INSTRUCTIONS TO CANDIDATES

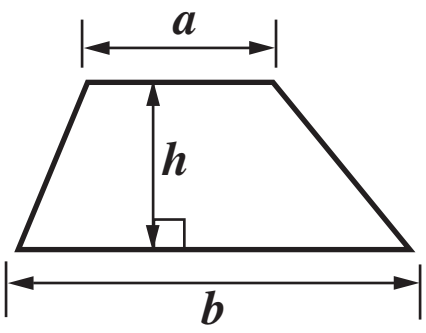
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **Show your working. Marks may be given for a correct method even if the answer is incorrect.**
- **Answer ALL the questions.**
- **Write your answer to each question in the space provided, however additional paper may be used if necessary.**

INFORMATION FOR CANDIDATES

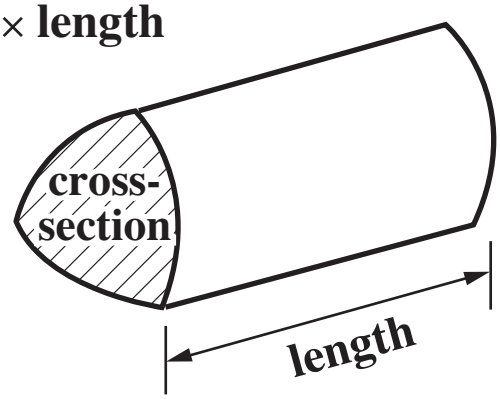
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **The total number of marks for this Section is 50.**

Formulae Sheet

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



Volume of prism = (area of cross-section) × length



1 Work out.

(a) 302 – 147
[2 marks]

(a) _____

(b) 3·4 × 100
[1 mark]

(b) _____

(c) 68 × 3
[1 mark]

(c) _____

(d) $\frac{3}{5}$ **of 45**

[2 marks]

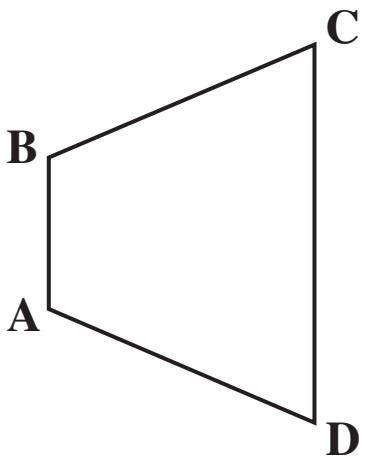
(d) _____

(e) **340 ÷ 20**

[1 mark]

(e) _____

2 ABCD is an isosceles trapezium.



(a) Measure the length of the line AD in centimetres.
[1 mark]

(a) _____ cm

(b) Draw the line of symmetry on the trapezium.
[1 mark]

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3 (a) Jules asked 50 people where they had been for their last holiday.
This pictogram shows their responses.

Spain	☺ ☺ ☺ ☺ ☺ ☺
UK	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
France	☺ ☺ ◔
USA	☺ ☺ ☺ ◔
Australia	
Other places	☺ ☺ ☺

Key: ☺ = 2 people

(i) How many people had been to France for their last holiday?
[1 mark]

(a)(i) _____

(ii) The row for Australia is not complete.

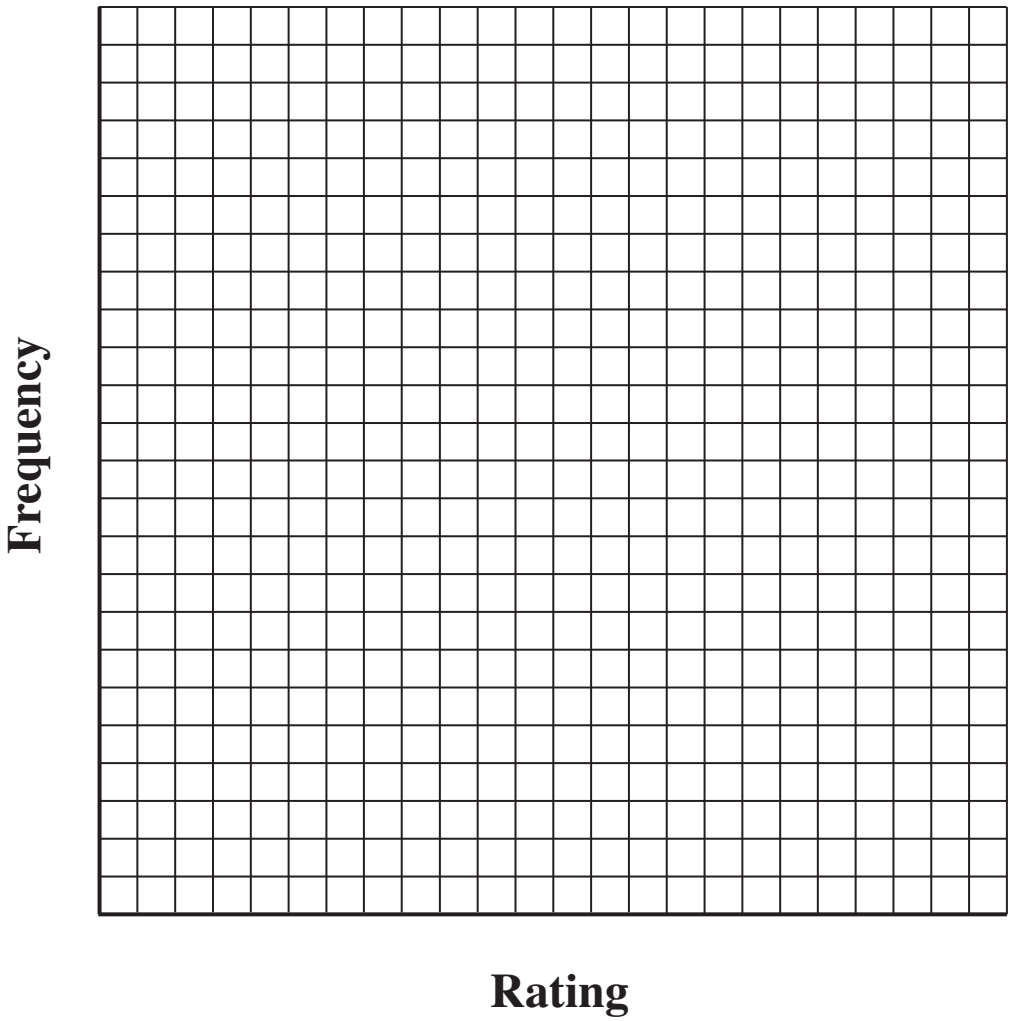
Work out how many people had been to Australia and show this on the pictogram.
[3 marks]

(b) Jules also asked the 50 people to rate their holidays. He used tally marks to record their answers.

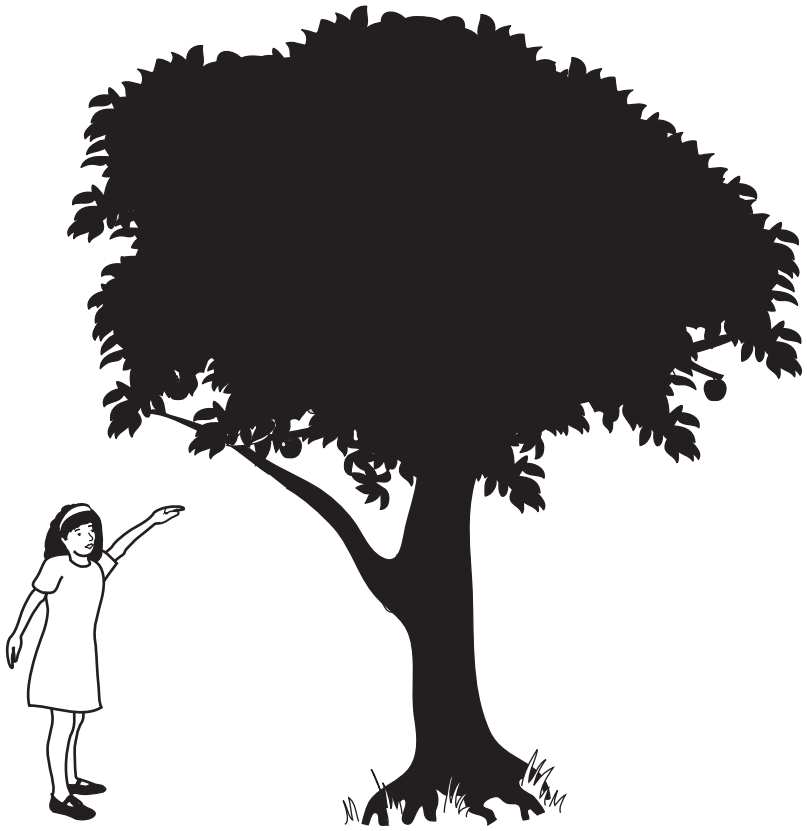
Rating	Tally marks	Frequency
Excellent	𝍸 𝍸 𝍸	
Good	𝍸 𝍸 𝍸 //	
Satisfactory	𝍸 𝍸	
Poor	𝍸 //	
Dreadful	//	

(i) Complete the frequency column.
[1 mark]

(ii) Draw a bar chart to show this information.
[4 marks]



4 Annie, who is eight years old, picks an apple from the tree in her garden.



(a) Complete this sentence for Annie, using the correct <u>METRIC</u> unit.
[1 mark]

I estimate that this apple weighs

100 _____ .

(b) Estimate the height of the tree, giving the correct <u>METRIC</u> unit.
Explain how you worked out your estimate.
[3 marks]

I estimate that the height of the tree is

_____ because _____

_____

_____

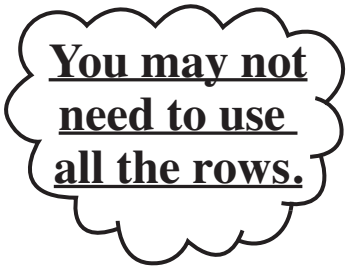
5 **Sam is playing a game with a fair coin and a fair dice. The four faces of the dice are numbered 1, 2, 3 and 4.**

(a) Sam throws the dice once.
What is the probability that the dice lands on 2?
[1 mark]

(a) _____

(b) Sam throws the coin and the dice together.

(i) Complete the table to show all the possible outcomes.
[2 marks]



Coin	Dice
Head	1

(ii) What is the probability that Sam throws a head and an odd number?
[2 marks]

(b)(ii) _____

6 (a) Simplify.

$$3x + 7y + y - 2x$$

[2 marks]

(a) _____

(b) Solve.

(i) $x - 4 = 9$

[1 mark]

(b)(i) _____

(ii) $\frac{x}{3} = 5$

[1 mark]

(ii) _____

(iii) $2x + 3 > 15$
[2 marks]

(iii) _____

7 Fill in the missing numbers in these patterns.

(a) 256 × 10 = 2560

128 × 20 = 2560

64 × ____ = 2560

____ × ____ = 2560

____ × ____ = 2560

[2 marks]

(b) 9^2 − 8^2 = 17

8^2 − 7^2 = ____

7^2 − ____ = ____

____ − ____ = ____

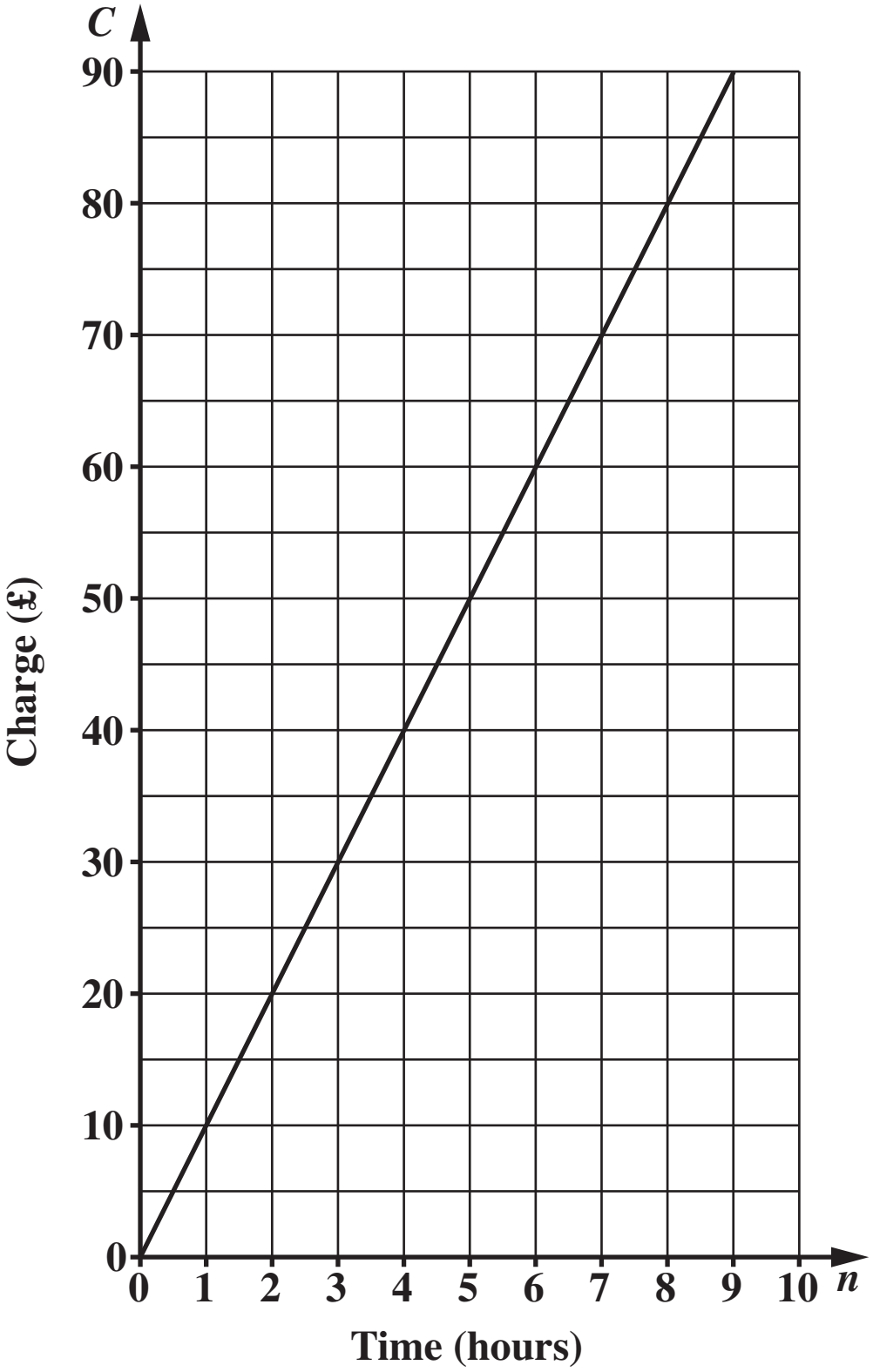
[3 marks]

8 <u>Cleanit!</u> and <u>SpickandSpan</u> are two companies offering cleaning services.

The graph opposite shows how much <u>Cleanit!</u> charges for its cleaning services.

(a) How much does <u>Cleanit!</u> charge for $2\frac{1}{2}$ hours of cleaning?
[1 mark]

(a) £ _____


C
90
80
70
60
50
40
30
20
10
0
Charge (£)
0 1 2 3 4 5 6 7 8 9 10 n
Time (hours)

(b) SpickandSpan uses this formula to calculate its charge for cleaning.

$$C = 5 + 8n$$

***C* is the charge in £,**
***n* is the number of hours.**

(i) Complete this table for the charges for SpickandSpan.
[1 mark]

n	1	5	10
C			

(ii) Draw the graph of the charges of SpickandSpan on the same grid as those for Cleanit!.
[2 marks]

(c) Jenny needs to have her offices cleaned.
The cleaning will take 8 hours each week.

Which of these two cleaning firms will be cheaper and by how much each week?
[2 marks]

(c) _____ by £ _____

9 (a) Complete.

$$\frac{2}{5} = \frac{\square}{15} = \frac{10}{\square}$$

[2 marks]

(b) Work these out.
Give your answers as mixed numbers.

(i) $3 - \frac{2}{5}$

[1 mark]

(b)(i) _____

(ii) $2\frac{2}{3} + 3\frac{2}{5}$

[3 marks]

(ii) _____