

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
TERMINAL PAPER – SECTION A (Foundation Tier)

**B281A**

Candidates answer on the Question Paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

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

**Friday 15 January 2010**  
**Morning**

**Duration: 1 hour**



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- 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.
- Do **not** write in the bar codes.
- 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**.
- This document consists of **12** pages. Any blank pages are indicated.

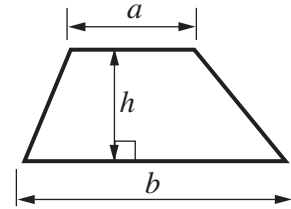
**WARNING**



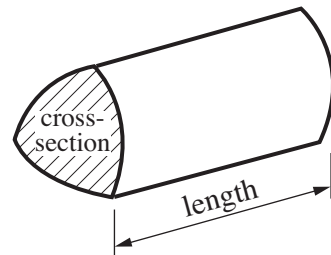
**No calculator can be used for Section A of this paper**

## Formulae Sheet

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



$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



**PLEASE DO NOT WRITE ON THIS PAGE**

1 Work out.

(a)  $302 - 147$

(a) ..... [2]

(b)  $3.4 \times 100$

(b) ..... [1]

(c)  $68 \times 3$

(c) ..... [1]

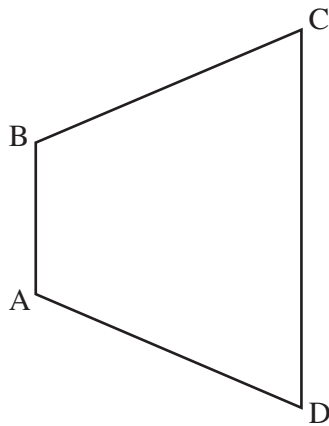
(d)  $\frac{3}{5}$  of 45

(d) ..... [2]

(e)  $340 \div 20$

(e) ..... [1]

2 ABCD is an isosceles trapezium.



(a) Measure the length of the line AD in centimetres.

(a) .....cm [1]

(b) Draw the line of symmetry on the trapezium.

[1]

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?

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

(ii) The row for Australia is not complete.

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

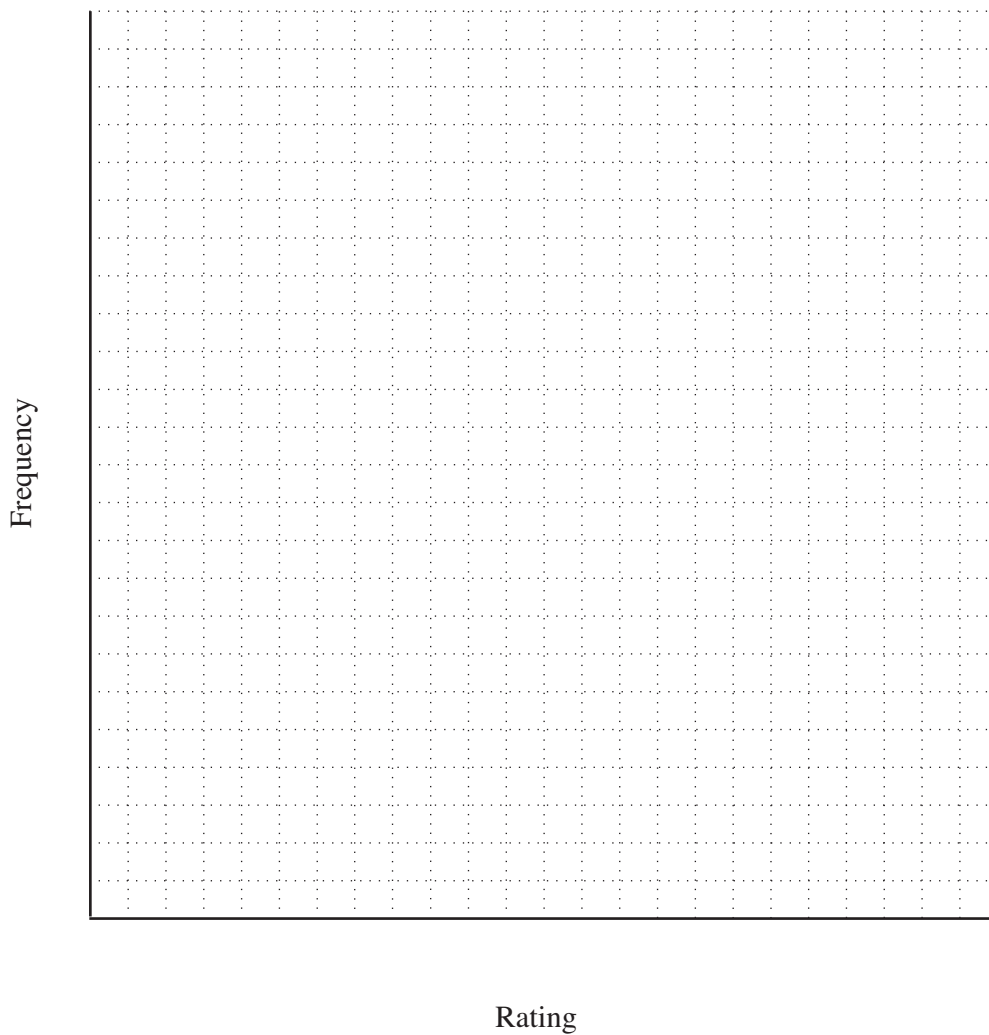
- (b) Jules also asked the 50 people to rate their holidays.  
He used tally marks to record their answers.

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

- (i) Complete the frequency column.

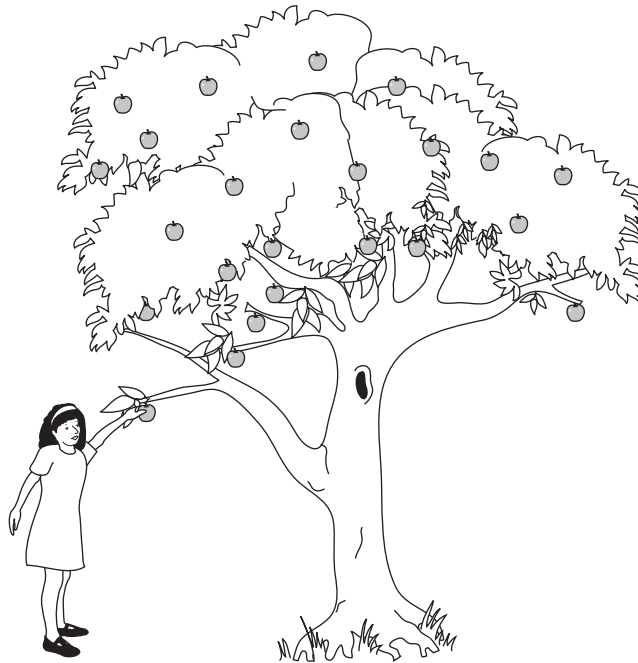
[1]

- (ii) Draw a bar chart to show this information.



[4]

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



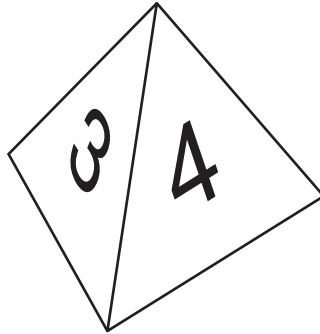
(a) Complete this sentence for Annie, using the correct **metric** unit.

I estimate that this apple weighs 100 ..... [1]

(b) Estimate the height of the tree, giving the correct **metric** unit.  
Explain how you worked out your estimate.

I estimate that the height of the tree is ..... because .....  
.....  
..... [3]

- 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?

(a) ..... [1]

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

- (i) Complete the table to show all the possible outcomes.

Coin	Dice
Head	1

*You may not need to use all the rows.*

[2]

- (ii) What is the probability that Sam throws a head and an odd number?

(b)(ii) ..... [2]

6 (a) Simplify.

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

(a) ..... [2]

(b) Solve.

(i)  $x - 4 = 9$

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

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

(ii) ..... [1]

(iii)  $2x + 3 > 15$

(iii) ..... [2]



7 Fill in the missing numbers in these patterns.

(a)  $256 \times 10 = 2560$

$$128 \times 20 = 2560$$

$$64 \times \dots = 2560$$

$$\dots \times \dots = 2560$$

$$\dots \times \dots = 2560$$

[2]

(b)  $9^2 - 8^2 = 17$

$$8^2 - 7^2 = \dots$$

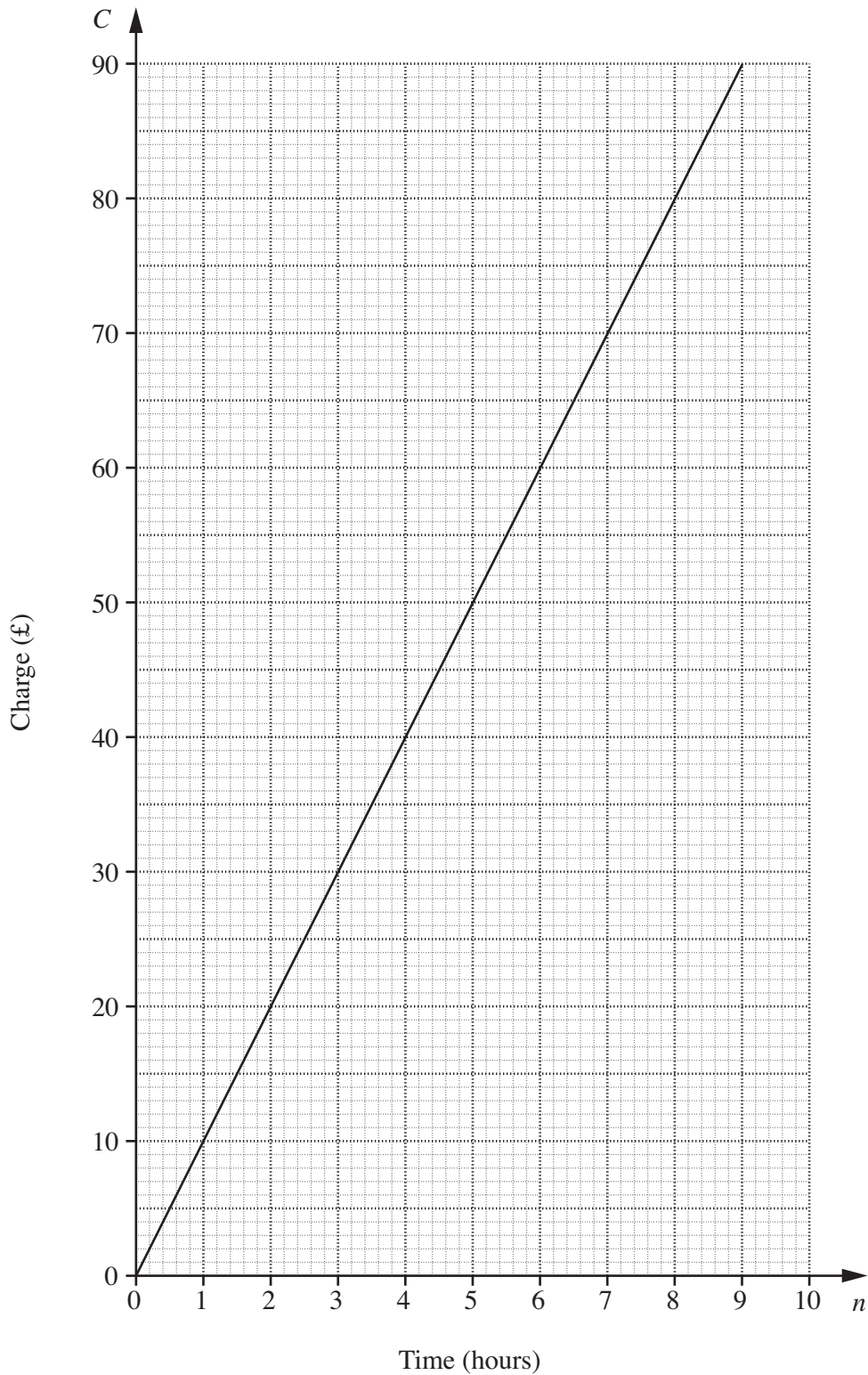
$$7^2 - \dots = \dots$$

$$\dots - \dots = \dots$$

[3]

8 *Cleanit!* and *SpickandSpan* are two companies offering cleaning services.

This graph shows how much *Cleanit!* charges for its cleaning services.



(a) How much does *Cleanit!* charge for  $2\frac{1}{2}$  hours of cleaning?

(a) £..... [1]

- (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*.

$n$	1	5	10
$C$			

[1]

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

(c) ..... by £ ..... [2]

**TURN OVER FOR QUESTION 9**

9 (a) Complete.

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

[2]

(b) Work these out.

Give your answers as mixed numbers.

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

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

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

(b)(ii) ..... [3]

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