

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**

B277A

**MATHEMATICS C
(GRADUATED ASSESSMENT)**

MODULE M7 – SECTION A

MONDAY 21 JUNE 2010: Afternoon

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)

WARNING

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

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

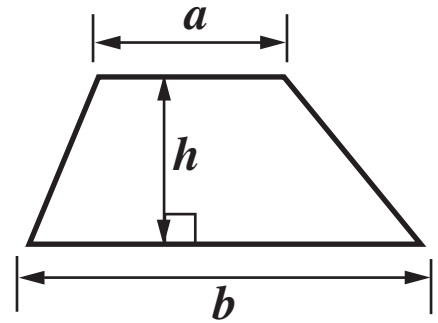
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **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. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).**

INFORMATION FOR CANDIDATES

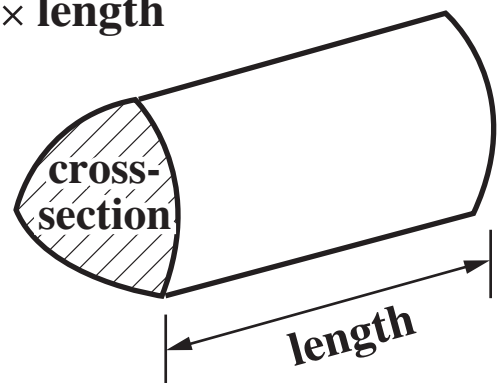
- **The number of marks is given in brackets [] at the end of each question or part question.**
- **The total number of marks for this Section is 25.**

FORMULAE SHEET

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



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



1 (a) Work out.

(i) $4^3 - \sqrt{49}$
[2 marks]

(a)(i) _____

(ii) $\frac{5^4 \times 5^3}{5^5}$
[2 marks]

(ii) _____

(b) Write down the reciprocal of 8.
[1 mark]

(b) _____

- 2 Hannah has completed some mathematics homework.
In each question her answer is wrong.

WITHOUT DOING ANY CALCULATION, explain why
Hannah's answers **MUST** be incorrect.

QUESTION 1

$$0.93 \times 124.7 = 128.1$$

[1 mark]

QUESTION 2

$$35.4 \div 0.47 = 16.8$$

[1 mark]

- 3 Calculate the special offer price for this satellite navigation system.
[3 marks]**

Special Offer
Satellite Navigation System
was £140
Now reduced by 20%

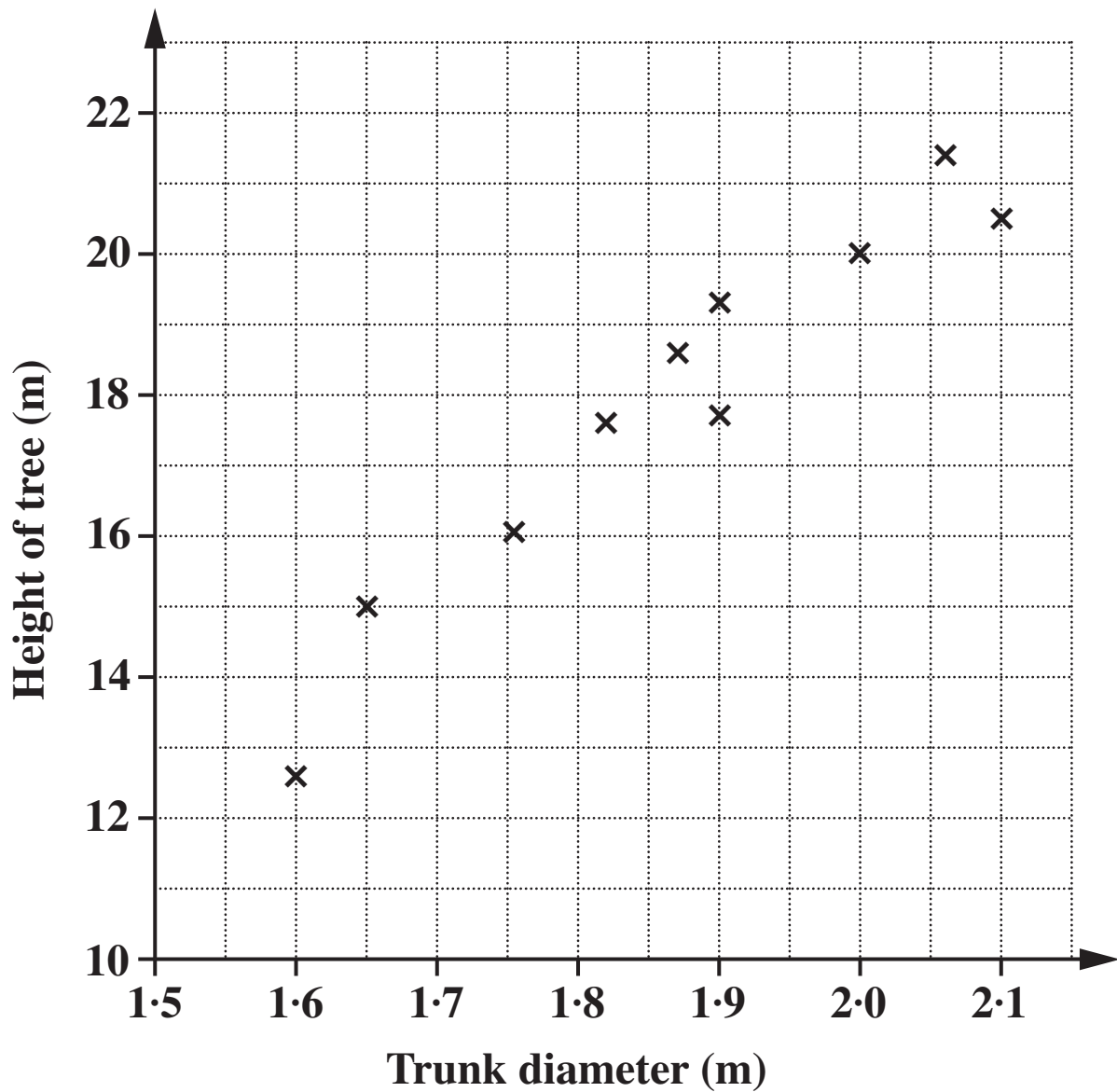
£ _____

- 4 The point A has coordinates $(-2, 5)$ and the point B has coordinates $(4, 1)$.

Find the coordinates of the midpoint of the line AB.
[2 marks]

(_____ , _____)

- 5 This scatter diagram shows the trunk diameters and heights of 10 oak trees.



- (a) Describe the correlation shown.
[1 mark]
-

(b) Another tree has trunk diameter 1.6 m and height 19 m.

Is this tree likely to be an oak tree?

Give a reason for your answer.

[1 mark]

_____ because _____

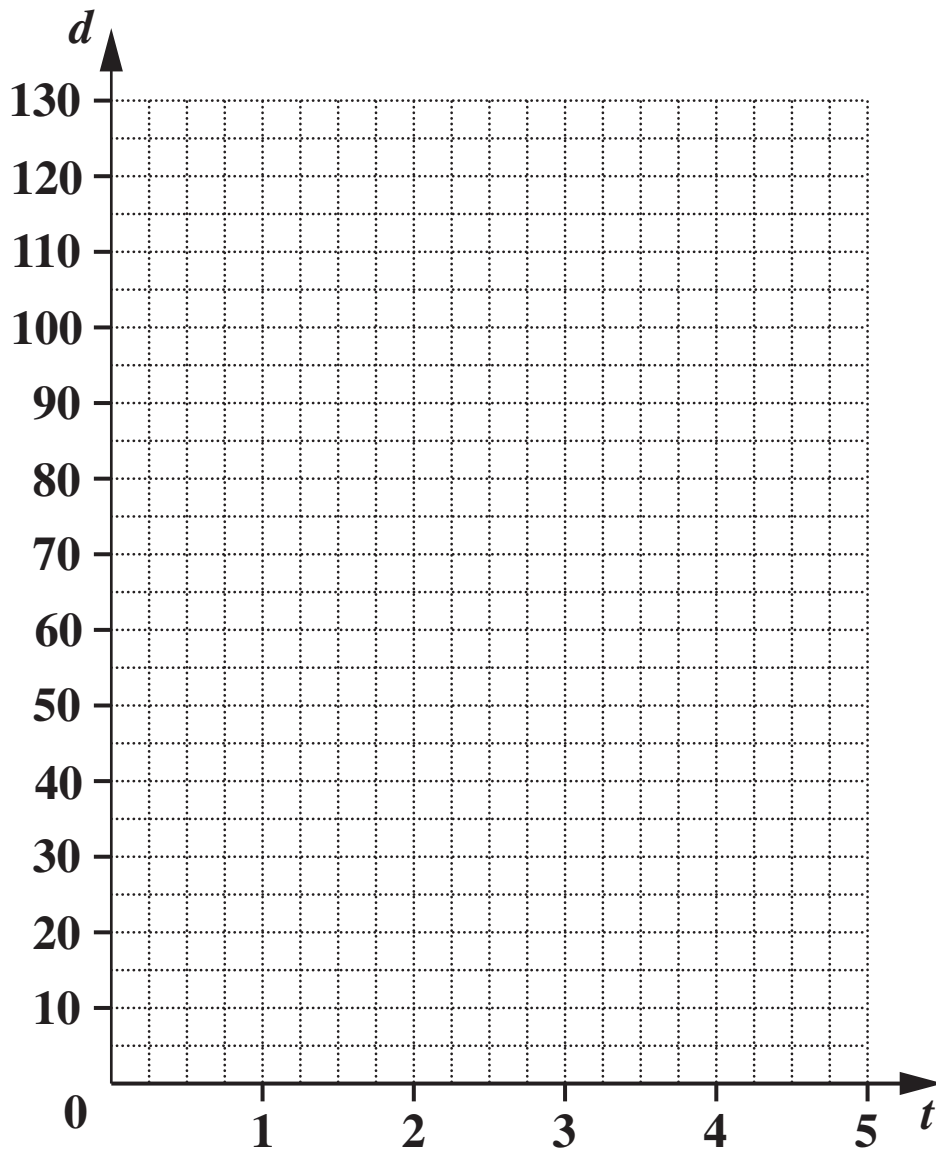
_____ [1]

6 The distance, d metres, a raindrop falls is given by $d = 5t^2$, where t is the time in seconds after it leaves the cloud.

(a) Complete this table of values for $d = 5t^2$.
[2 marks]

t	0	1	2	3	4	5
d	0	5		45		125

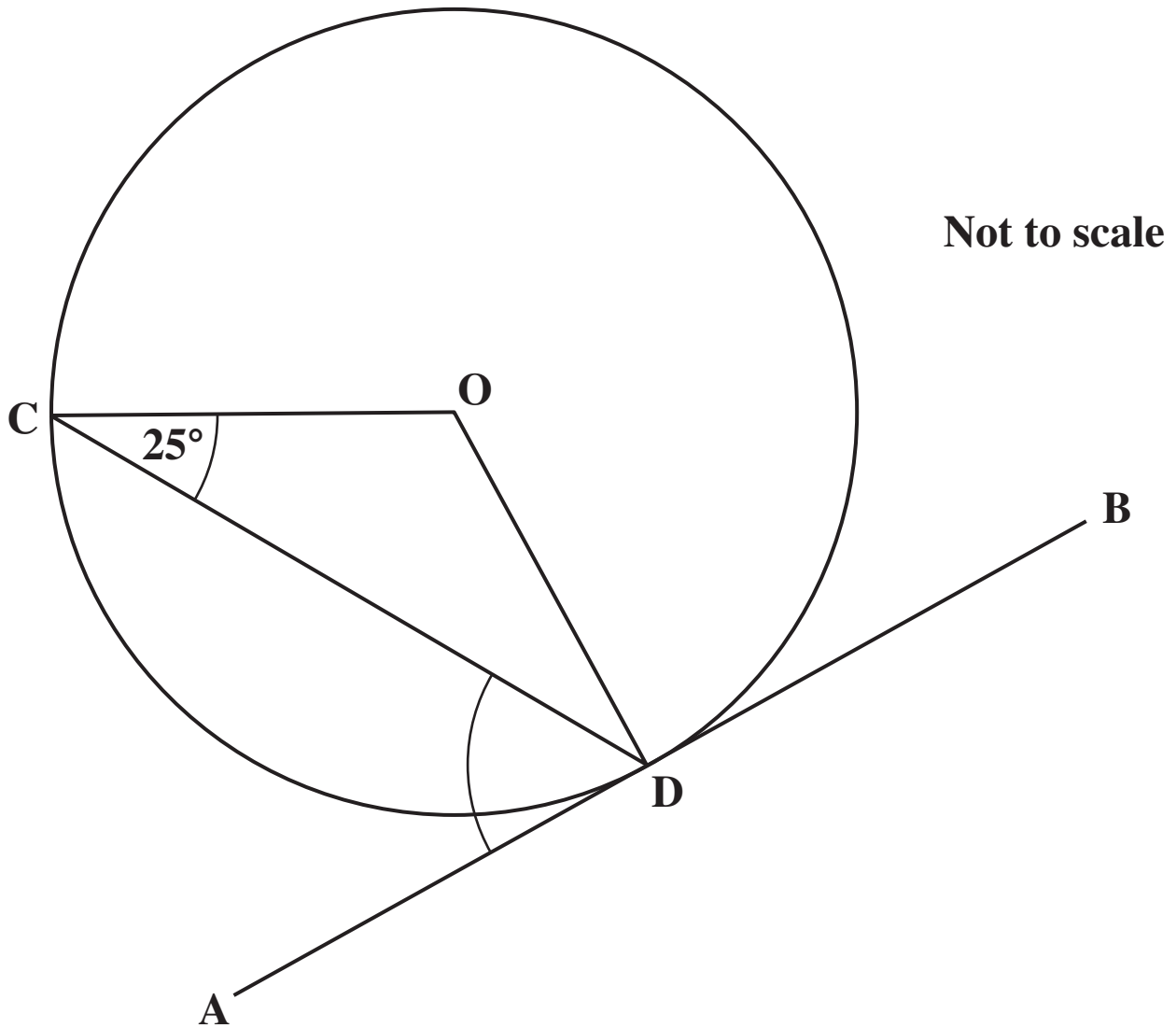
- (b) Draw the graph of $d = 5t^2$ for $t = 0$ to 5 .
[2 marks]



- (c) Use your graph to estimate the distance fallen by the raindrop after 2.5 seconds.
[1 mark]

(c) _____ m

- 7 **ADB is the tangent at D to the circle, centre O.
C is a point on the circumference.
Angle OCD = 25°.**



**Calculate angle CDA.
Show each step of your calculation.
[3 marks]**

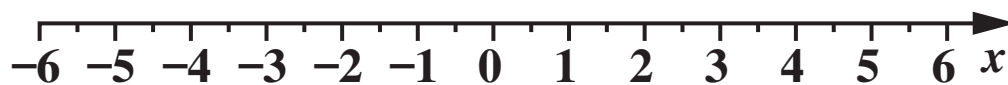
8 (a) Solve.

$$3x - 2 \leq 10$$

[2 marks]

(a) _____

(b) Represent your solution to part (a) on this number line.
[1 mark]



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