Candidate Forename		Candidate Surname	

Centre Number						Candidate Number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B277B

MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M7 – SECTION B

TUESDAY 1 MARCH 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)
Scientific or graphical calculator

READ INSTRUCTIONS OVERLEAF

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INSTRUCTIONS TO CANDIDATES

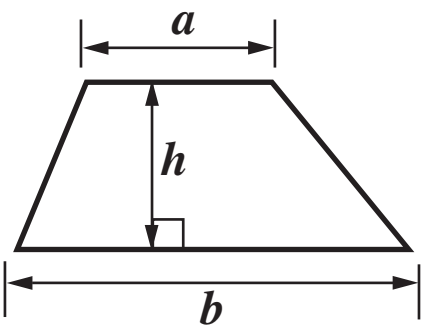
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**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

INFORMATION FOR CANDIDATES

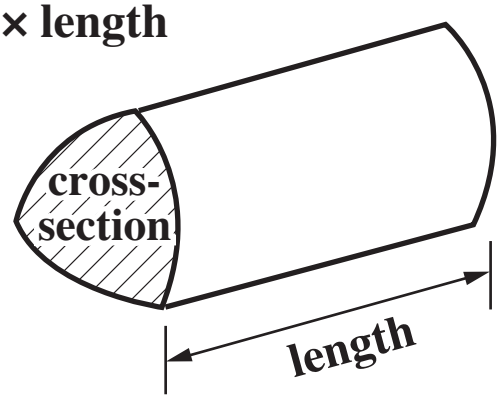
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **Section B starts with question 8.**
- **You are expected to use a calculator in Section B of this paper.**
- **Use the π button on your calculator or take π to be 3·142 unless the question says otherwise.**
- **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) × length



8 (a) This table shows the number of goals scored in 32 football matches one weekend.

Number of goals	Frequency
0	3
1	2
2	5
3	7
4	8
5	1
6	4
7	2

A local radio station decided to send a reporter to a match chosen at random.

What is the probability that the reporter went to a match at which 5 or more goals were scored? [2 marks]

(a) _____

(b) This table shows the attendances at the 32 football matches.

Attendance	Frequency	Midpoint of attendances
1 – 200	5	100·5
201 – 400	12	300·5
401 – 600	8	500·5
601 – 800	6	700·5
801 – 1000	1	900·5

Using the midpoints given, calculate an estimate of the mean attendance at the matches. [3 marks]

(b) _____

9 Sue and Jim are both driving 130 miles from Eastleigh to Birmingham.
Sue drives at an average speed of 65 mph and Jim drives at an average speed of 50 mph.

(a) Work out how many more minutes Jim's journey takes than Sue's journey. [3 marks]

(a) _____ minutes

(b) Sue and Jim have the same type of car.
A report states that at an average speed of 50 mph the car travels 10.4 miles on one litre of petrol.
Petrol costs 114.9p per litre.

(i) Work out how much the petrol for Jim's journey of 130 miles costs. [2 marks]

(b)(i) £ _____

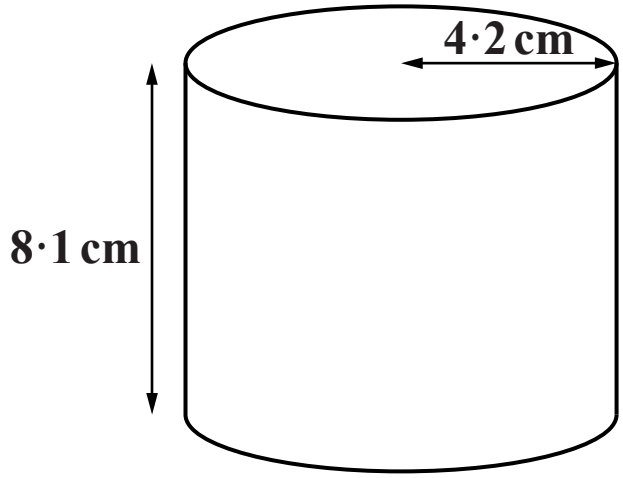
(ii) The report states that driving at 65 mph costs 21% more than driving at 50 mph.

Work out how much the petrol for Sue's journey costs. [2 marks]

(ii) £ _____

10 This can is a cylinder of height 8·1 cm and radius 4·2 cm.

A label covers the curved surface area of the can.
There is no overlap on the label.



Calculate the area of the label. [3 marks]

_____ cm^2

11 Rearrange these formulas to make x the subject.

(a) $y = \frac{x}{4}$

[1 mark]

(a) _____

(b) $y = 5x - 7$

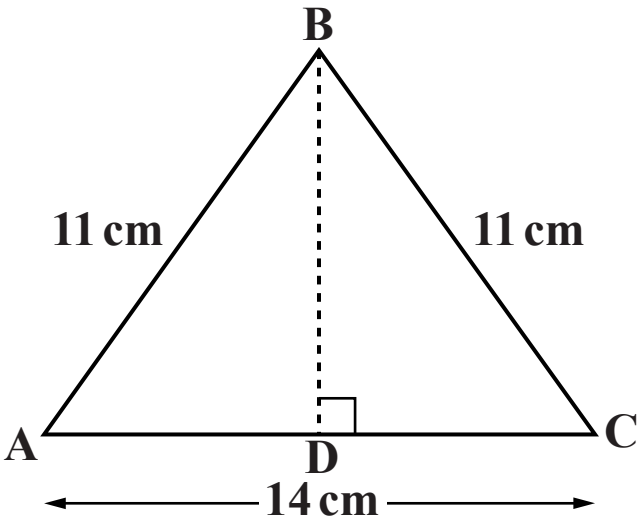
[2 marks]

(b) _____

12 One solution of the equation $x^3 - 2x = 15$ lies between 2 and 3.

Find this solution correct to one decimal place.
You must show all your trials and their outcomes.
[3 marks]

13 ABC is an isosceles triangle.
BA = BC = 11 cm and AC = 14 cm.



Not to scale

Calculate the height BD. [4 marks]

_____ **cm**

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