Centre No.						Paper Reference					Surname		Initial(s)
Candidate No.						**5**	**5**	**1**	**0**	**/**	**10**	**B**	Signature

Examiner's use only

Team Leader's use only

Materials required for examination
Ruler graduated in centimetres and
millimetres, protractor, compasses,
pen, HB pencil, eraser, calculator.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
This section has 5 questions. The total mark for this section is 19. The total mark for this paper is 38.
There are 8 pages in this question paper. Any blank pages are indicated.
Calculators may be used for Section B only.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.
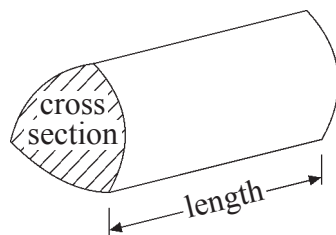
N 2 4 9 2 1 A 0 1 0 8

Turn over

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GCSE Mathematics 1387/8
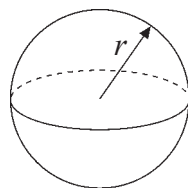
Formulae: Higher Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

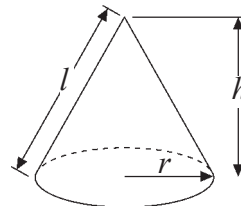**Volume of a prism** = area of cross section × length

Volume of sphere $= \frac{4}{3}\pi r^3$

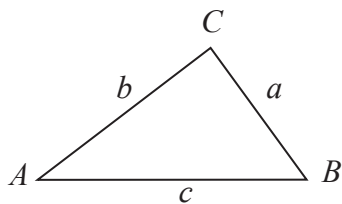**Surface area of sphere** $= 4\pi r^2$

Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi r l$

In any triangle ABC

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$

where $a \neq 0$, are given by

$$x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$$

Sine Rule $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle $= \frac{1}{2}ab \sin C$
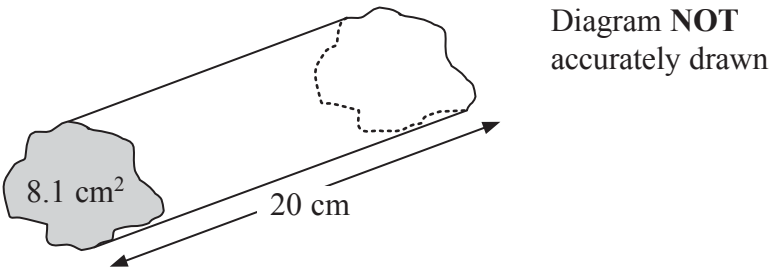
SECTION B

Answer ALL FIVE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. The diagram shows a prism.

Diagram **NOT**
accurately drawn

8.1 cm^2

20 cm

The area of cross section of the prism is 8.1 cm^2.
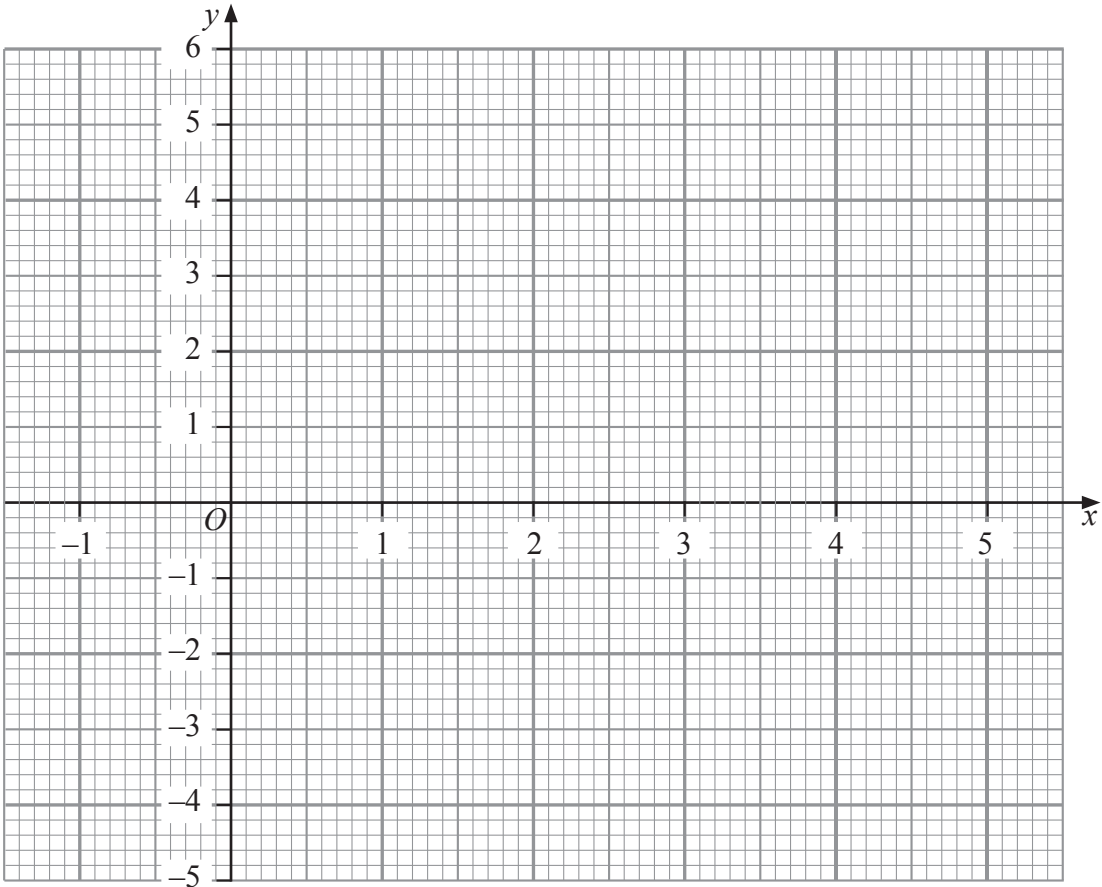The length of the prism is 20 cm.

Work out the volume of the prism.

......................cm^3

(Total 2 marks)

Q1

2. (a) Complete the table of values for $y = x^2 - 4x$

x	-1	0	1	2	3	4	5
y	5		-3		-3		

(2)

(b) On the grid, draw the graph of $y = x^2 - 4x$

(2)

(Total 4 marks)

3. The equation

$$x^3 - x = 140$$

has a solution between 5 and 6
Use a trial and improvement method to find this solution.
Give your solution correct to 1 decimal place.
You must show **all** your working.

$x = $ ....

(Total 4 marks)

Q3

4. Julie measured the heights, in metres, of some of her friends.
The box plot summarises this information.

Height in metres
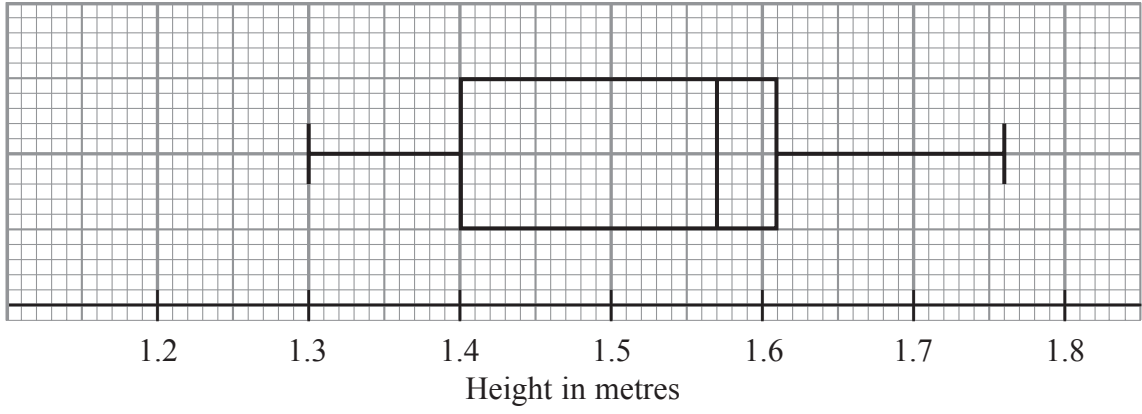
(a) Write down the median height.

.... m

(1)

(b) Write down the lower quartile of the heights.

.... m

(1)

(c) Find the range of the heights.

.... m

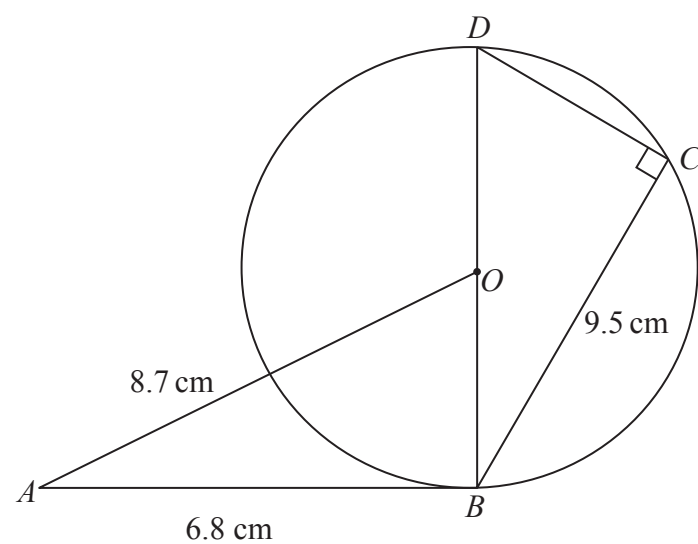**(1)**   **Q4**

(Total 3 marks)

5.

Diagram **NOT** accurately drawn

B, *C* and *D* are points on a circle, centre *O*.
BOD is a diameter of the circle.
AB is the tangent to the circle at *B*.
Angle *BCD* = 90°.
OA = 8.7 cm, *AB* = 6.8 cm, *BC* = 9.5 cm.

Calculate the size of angle *CBD*.
Give your answer correct to 1 decimal place.

.....................°

(Total 6 marks)

Q5

TOTAL FOR SECTION B: 19 MARKS

TOTAL FOR PAPER: 38 MARKS

END

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