

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M7 – SECTION B

B277B

Candidates answer on the question paper

OCR Supplied Materials:

None

Other Materials Required:

- Geometrical instruments
- Tracing paper (optional)
- Scientific or graphical calculator

Tuesday 20 January 2009
Morning

Duration: 30 minutes



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.

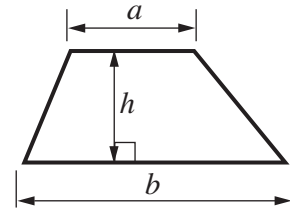
INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- 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**.
- This document consists of **8** pages. Any blank pages are indicated.

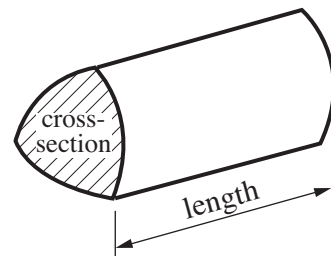
FOR EXAMINER'S USE	
SECTION B	

Formulae Sheet

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

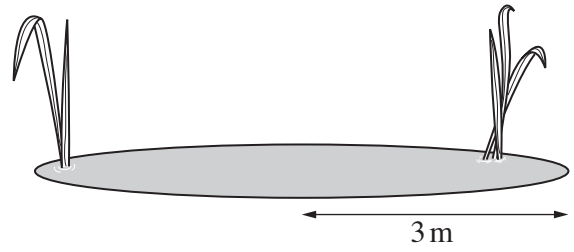


Volume of prism = (area of cross-section) \times length



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8 A circular pond has radius 3 m.

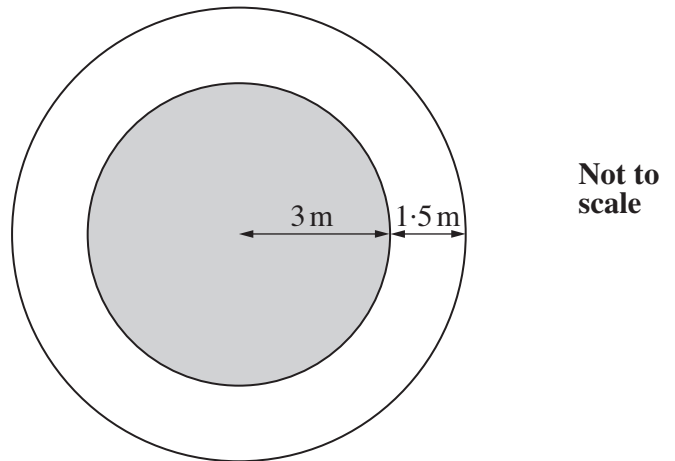


(a) Calculate the circumference of the pond.

(a) m [2]

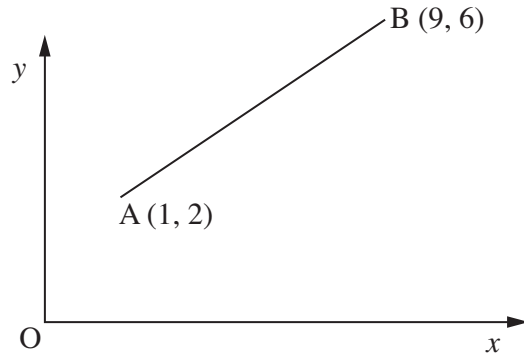
(b) A path of width 1.5 m is laid round the pond, as shown in this plan view.

Calculate the area of the path.



(b)m² [3]

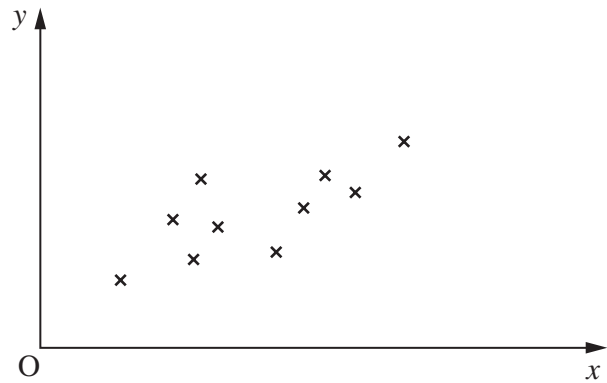
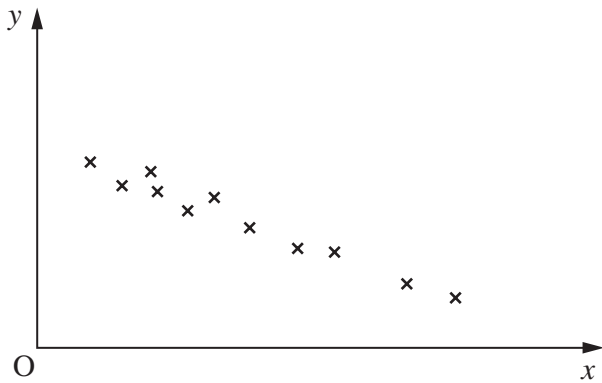
9 Find the coordinates of the midpoint of AB.



Not to scale

(.....,) [2]

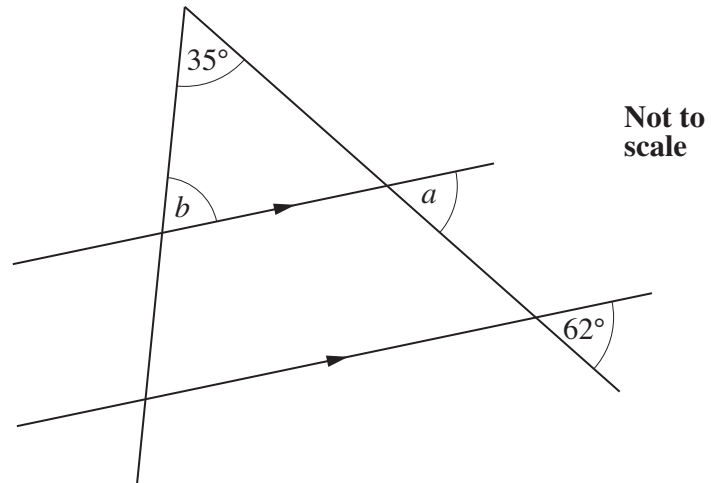
10 Describe the strength and type of correlation shown in each of these scatter diagrams.



.....

[2]

11



(a) Explain why $a = 62^\circ$.

$a = 62^\circ$ because

..... [1]

(b) Find angle b .

(b) $^\circ$ [2]

12 Jean often drives to Cambridge.

- (a) She keeps a record of the time that the journey takes her. This table summarises the data for 2006.

Journey time (t minutes)	Frequency
$80 < t \leq 100$	3
$100 < t \leq 120$	12
$120 < t \leq 140$	5
$140 < t \leq 160$	1
$160 < t \leq 180$	2

Calculate an estimate of the mean time for her journey to Cambridge.

(a) minutes [4]

- (b) One day in 2006, the price per litre of diesel decreased from 92.7p to 85.9p.

Calculate the percentage decrease.

Give your answer correct to 1 decimal place.

(b)% [3]

13 Jane and Alec throw a dice 500 times.
They get a six 80 times.

- (a) Calculate the relative frequency of Jane and Alec getting a six.
Give your answer as a decimal.

(a) [2]

- (b) (i) Jane says that the relative frequency shows that the dice is fair.

Give a reason to support Jane's statement.

.....
..... [1]

- (ii) Alec says that the relative frequency does not show that the dice is fair.

Give a reason to support Alec's statement.

.....
..... [1]

14 Rearrange this formula to make x the subject.

$$5x - y = 10$$

$x =$ [2]

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