

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M3 – SECTION B

B273B

Candidates answer on the question paper

OCR Supplied Materials:
None

- Other Materials Required:**
- Geometrical instruments
 - Tracing paper (optional)
 - Electronic calculator

Monday 9 March 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.

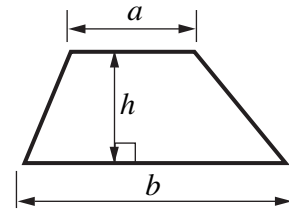
INFORMATION FOR CANDIDATES

- 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.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

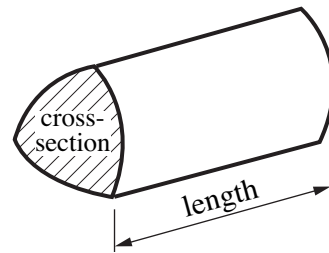
FOR EXAMINER'S USE	
SECTION B	

Formulae Sheet

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

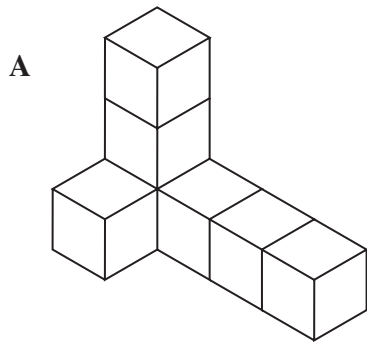


$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



PLEASE DO NOT WRITE ON THIS PAGE

8 Solid A is made from 7 cubes.

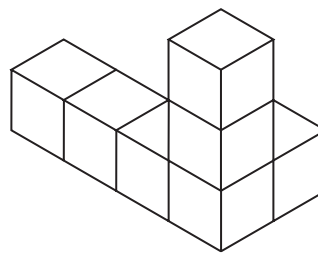
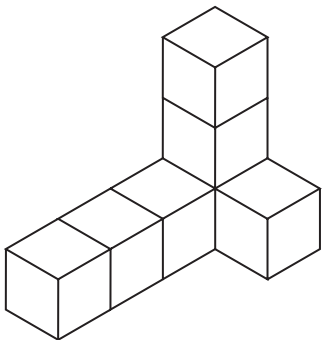
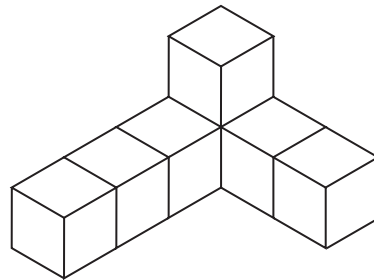
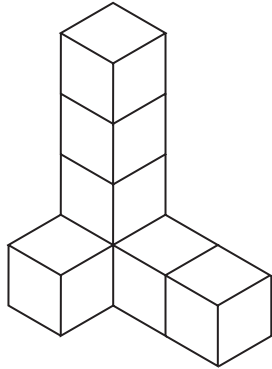


Here are 4 solids each made from 7 cubes.

Which of these solids are the same as solid A?

Put a tick (✓) under those that are.

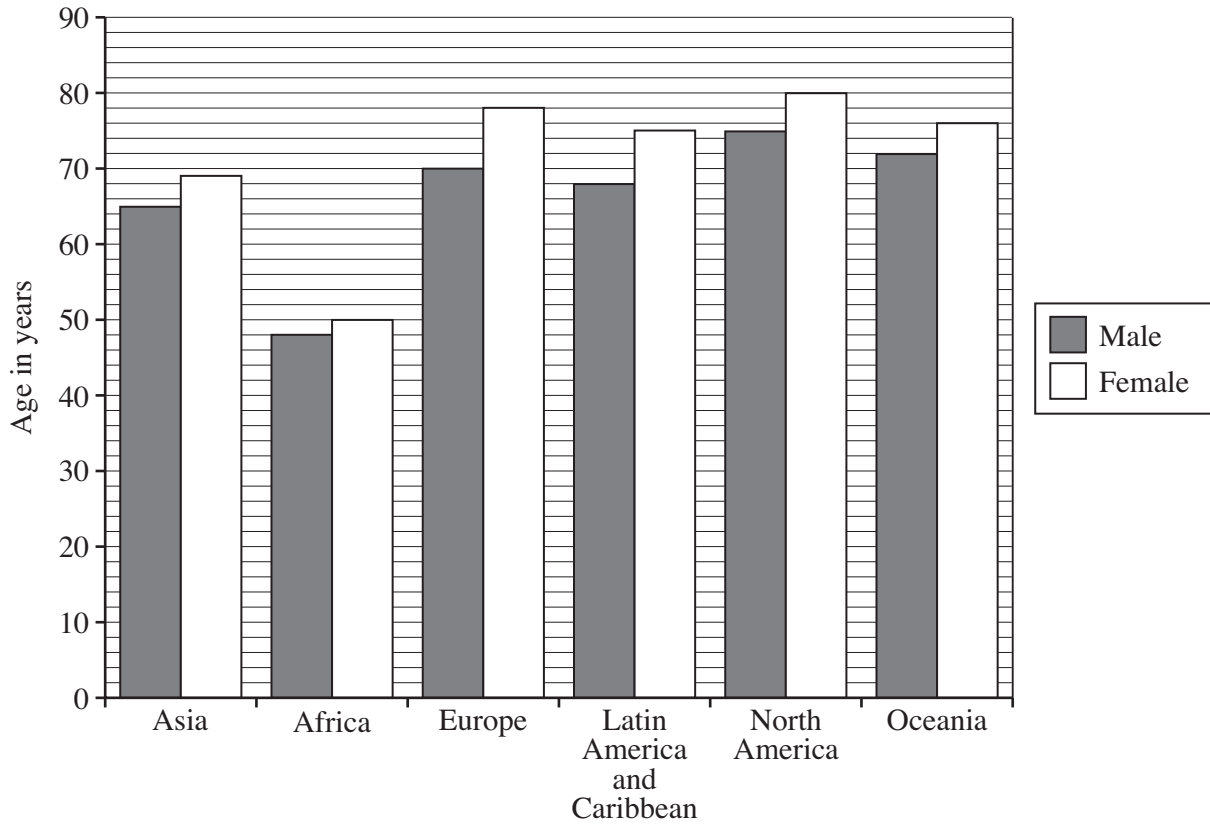
Put a cross (✗) under those that are not.



[2]

9 This graph shows the average life expectancy for males and females in different continents.

Average Life Expectancy



(a) What is the average life expectancy for males in Europe?

(a)years [1]

(b) What is the average life expectancy for females in Oceania?

(b)years [1]

(c) Sofia says:

On average, males in North America live longer than males in any other continent.

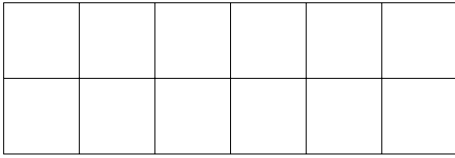
Explain why the bar chart shows that this is true.

.....
 [1]

(d) Comment on **one** difference between the life expectancy for males and females.

.....
 [1]

10 (a) Shade $\frac{5}{6}$ of this shape.



[1]

(b) Work out $\frac{3}{4}$ of 120.

(b) [2]

- 11 (a) In a basketball match, the playing time is one hour.
A match is split into four quarters.

In one match, the first quarter finished at 8:10 pm.
There were no stoppages.

At what time did it start?

(a) [2]

- (b) Taylor is a basketball player.
These are the numbers of points he has scored in each of his last eight matches.

15 12 13 14 9 16 11 14

- (i) Work out the mean number of points Taylor scored per match.

(b)(i) [3]

- (ii) Work out the range of points he scored.

(ii) [1]

12 Ray is organising a meeting for 20 people.

(a) He uses this rule to work out how many cups of coffee he needs.

$\text{Number of cups} = \text{number of people} \times 3 + 10$

How many cups of coffee does he need for the 20 people?

(a) [2]

(b) He uses this rule to work out how many teabags he needs.

$$t = 2p$$

t is the number of teabags.

p is the number of people.

How many teabags does he need for the 20 people?

(b) [1]

(c) Ray buys orange juice in 2 litre cartons.
Each person has one 250 ml glass of juice at lunch.

(i) How many 250 ml glasses can Ray fill from one 2 litre carton?

(c)(i) [2]

(ii) Ray needs 20 glasses of juice.

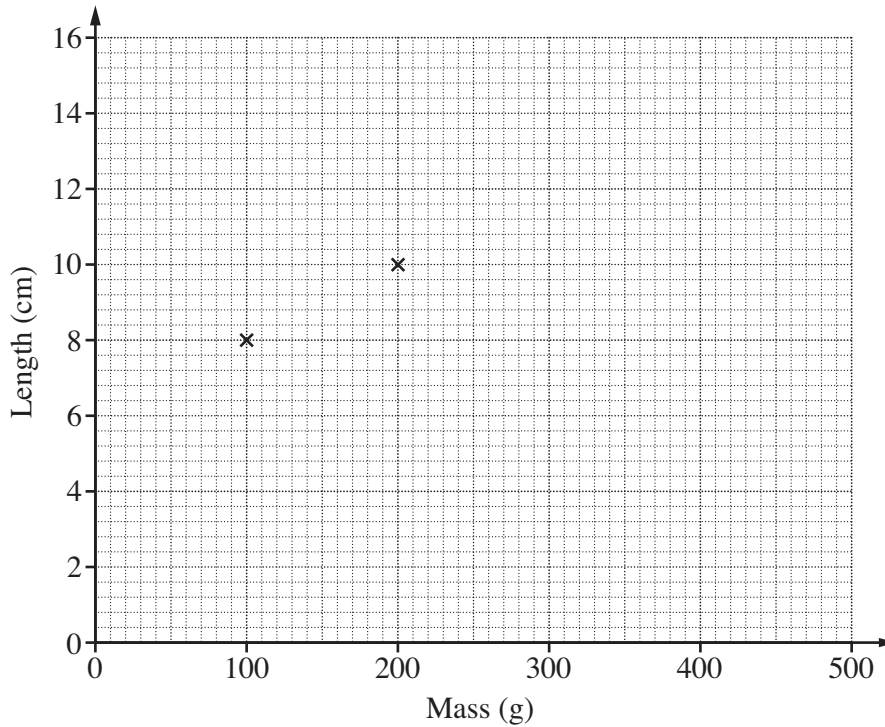
How many 2 litre cartons does Ray need to buy?

(ii) [1]

TURN OVER FOR QUESTION 13

13 Laura is doing an experiment about the extension of a spring. She hangs different masses on the spring and measures the length of the spring each time.

She has started to draw a graph of her results.



(a) Laura hangs a mass of 500 g on the spring. She measures the length of the spring as 16 cm.

Add this result to her graph. [1]

(b) Draw a straight line through the three points on Laura’s graph. [1]

(c) Use the graph to find the length of the spring

(i) with no mass hanging on it,

(c)(i) cm [1]

(ii) with a mass of 300 g hanging on it.

(ii) cm [1]



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