

**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 8 March 2010
Morning**

Duration: 30 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

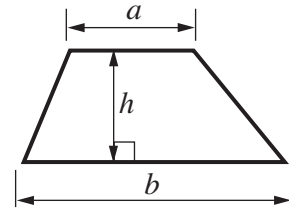
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working. 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

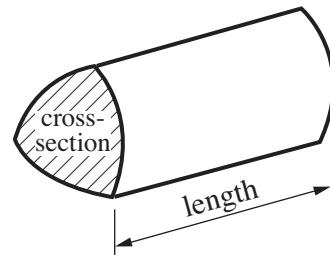
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **12** pages. Any blank pages are indicated.

Formulae Sheet

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

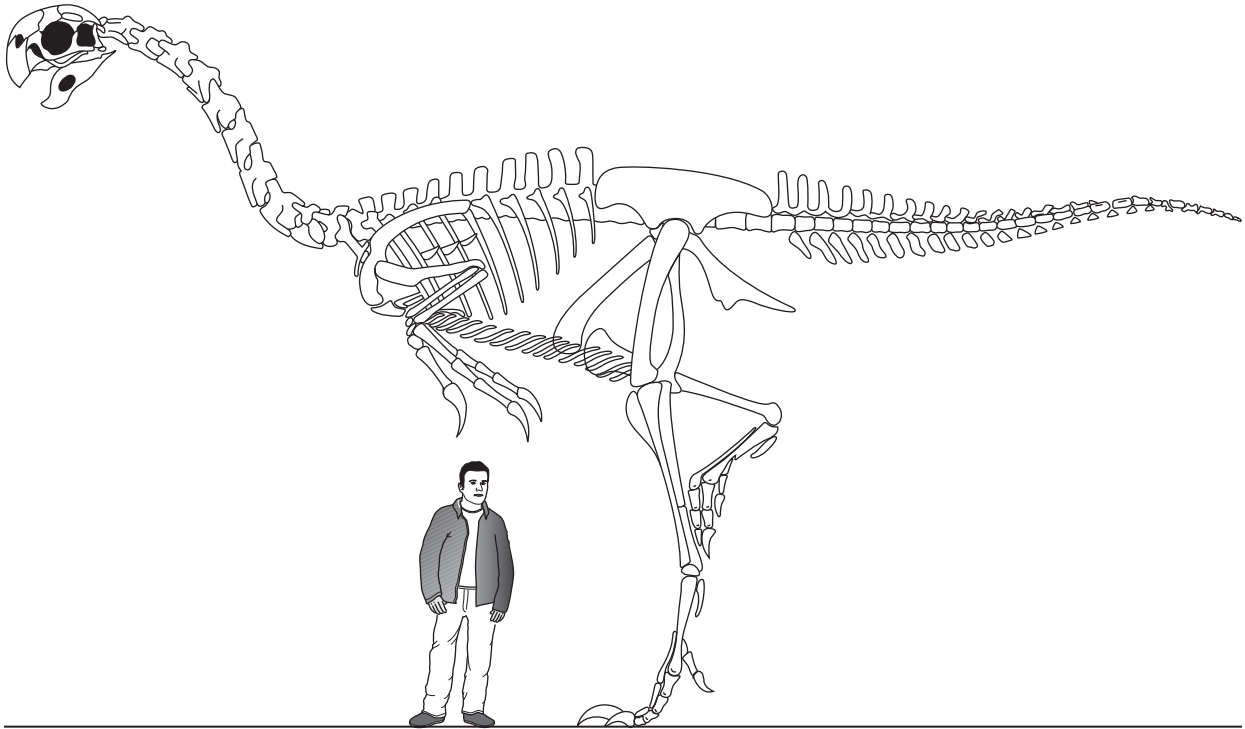


Volume of prism = (area of cross-section) \times length



PLEASE DO NOT WRITE ON THIS PAGE

8 (a) Brian is visiting a museum.



Brian thinks this dinosaur skeleton is 12 m tall.

Explain why Brian is wrong.

.....

.....

.....

.....

[1]

(b) Another dinosaur is 4.5 m tall.

Brian's height is $\frac{2}{5}$ of the height of this dinosaur.

Work out Brian's height in metres.

(b) m [2]

Turn over

9 Solve.

(a) $3x = 27$

(a) [1]

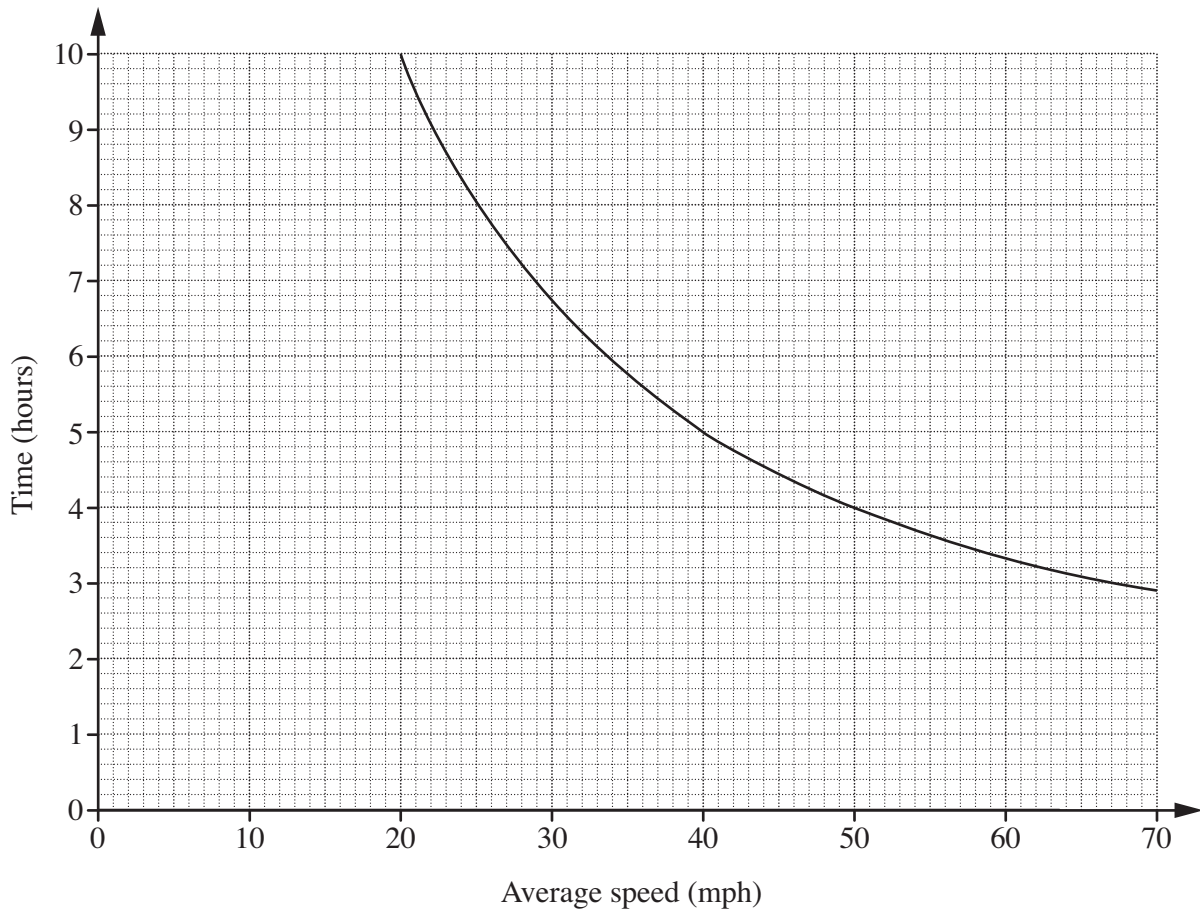
(b) $x - 2 = 5$

(b) [1]

(c) $x + x = 5$

(c) [1]

10 This graph shows the time it takes to drive from London to Liverpool at different average speeds.



Use the graph to answer these questions.

(a) Karen takes 5 hours to drive from London to Liverpool.

What is her average speed?

(a) mph [1]

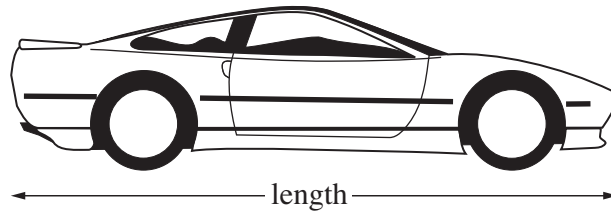
(b) Luka drives from London to Liverpool at an average speed of 50 mph.

How long does this journey take?

(b) hours [1]

Turn over

- 11 This is the side view of a model car, drawn full size.



The scale of the model is 2 centimetres to 1 metre.

- (a) What is the length of the real car in metres?

(a) m [2]

- (b) The width of the real car is 1.6 metres.

What is the width of the model car?

(b) cm [2]

- 12 Anna found the running speeds of these animals on a website. The website gave the speeds in feet per second (fps).

Animal	Speed (fps)
Cheetah	105
Antelope	90
Lion	75
Horse	70

- (a) Use this word formula to change the speed of a cheetah from feet per second into miles per hour (mph).

$$\text{Speed in miles per hour} = \text{speed in feet per second} \div 1.5$$


(a) mph [2]

- (b) Anna sees this road sign. It shows that the speed limit is 50 mph.



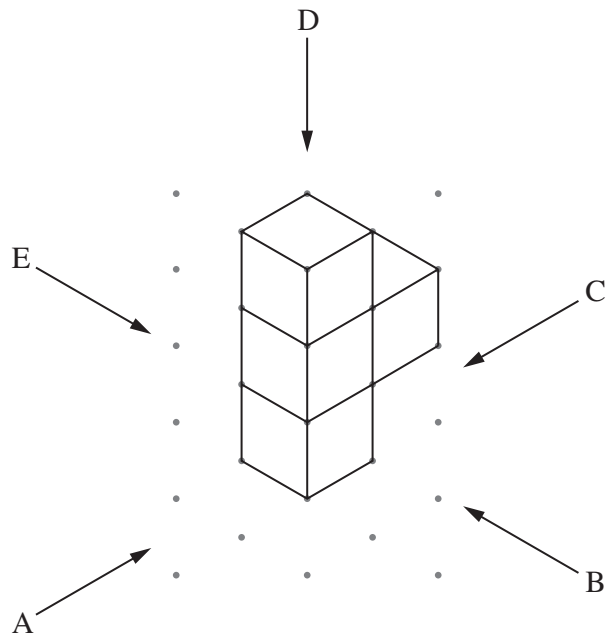
Use this word formula to find what the road sign would show in feet per second.

$$\text{Speed in feet per second} = \text{speed in miles per hour} \times 1.5$$

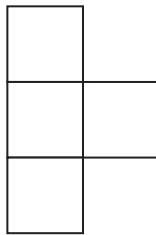
(b)  [2]

Turn over

13 (a) Igor makes this shape by joining **four** centimetre cubes, face to face.



(i) He draws this view of the shape.



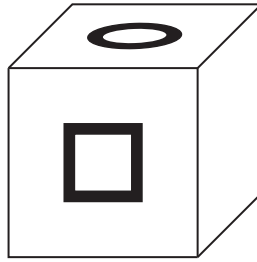
Complete this sentence.

This is the view from position [1]

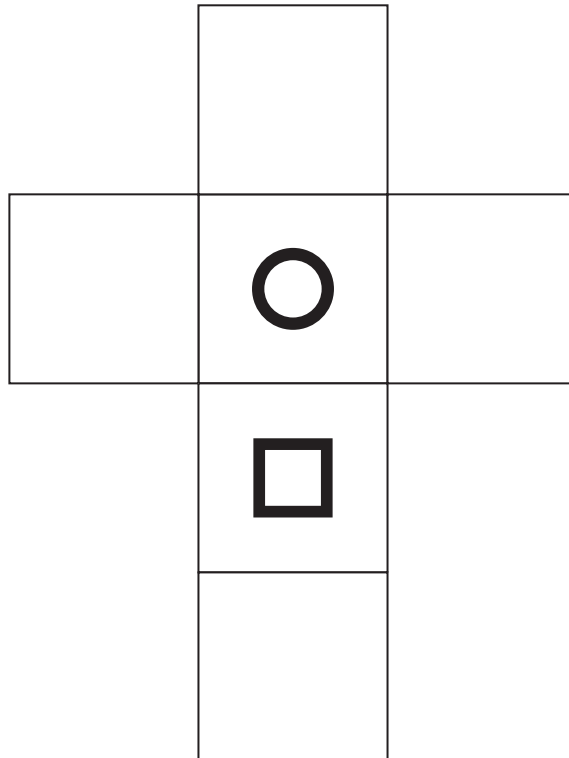
(ii) How many cubes can be seen from position A?

(a)(ii) [1]

- (b) This cube has a square (■) on its front and back faces.
It has a circle (●) on its top and bottom faces.



Draw one ■ and one ● on the correct faces on the net.



[2]

- 14 George asks 30 students which name, from a list of five names, they like best. These are their answers.

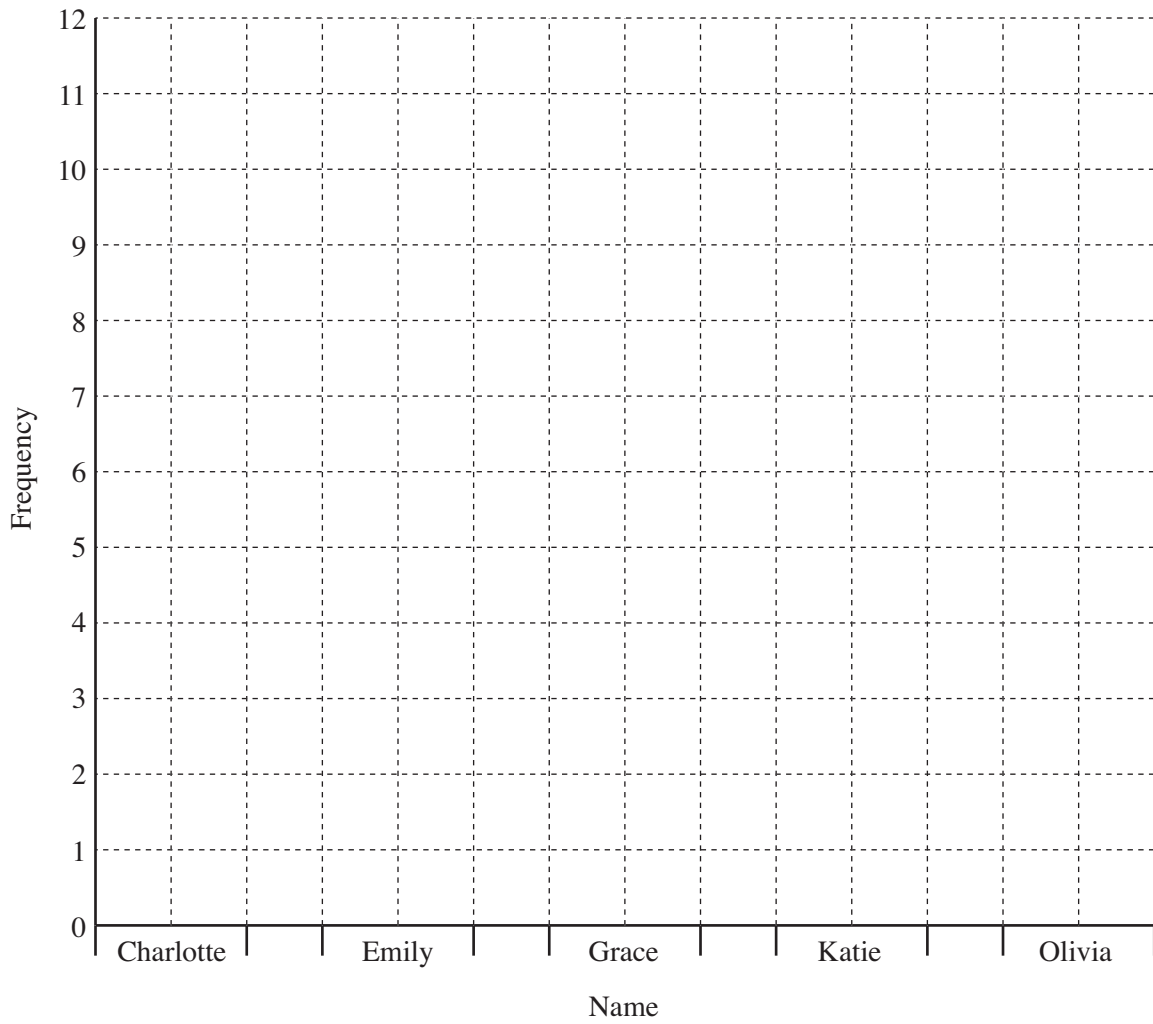
Emily	Olivia	Katie	Grace	Charlotte	Katie
Grace	Charlotte	Olivia	Charlotte	Grace	Olivia
Grace	Emily	Charlotte	Grace	Charlotte	Emily
Charlotte	Grace	Olivia	Charlotte	Emily	Charlotte
Grace	Charlotte	Emily	Olivia	Olivia	Grace

- (a) Complete this table.

Name	Tally	Frequency
Charlotte		
Emily		
Grace		
Katie		
Olivia		

[2]

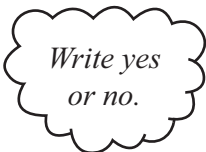
(b) Use your table to draw a bar chart for George's results.



[2]

(c) George thought that Charlotte was the favourite name.

Was George correct?
Explain your answer.



..... because

..... [1]

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