MATHEMATICS C
(Graduated Assessment)

1966/2332B

MODULE M2 – SECTION B

Monday   **23 JANUARY 2006**   Morning   30 minutes

Candidates answer on the question paper.
Additional materials:
    Geometrical instruments
    Tracing paper (optional)
    Electronic calculator

Candidate
Name

Centre
Number

Candidate
Number

TIME   30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers on the dotted lines unless the question says otherwise.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- There is a space after most questions. Use it to do your working. In many questions marks will be given for a correct method even if the answer is incorrect.
- Do not write in the bar code. Do not write in the grey area between the pages.
- **DO NOT** WRITE IN THE AREA **OUTSIDE** THE BOX BORDERING EACH PAGE. ANY WRITING IN THIS AREA WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

- You are expected to use a calculator in Section B of this paper.
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this Section is 25.
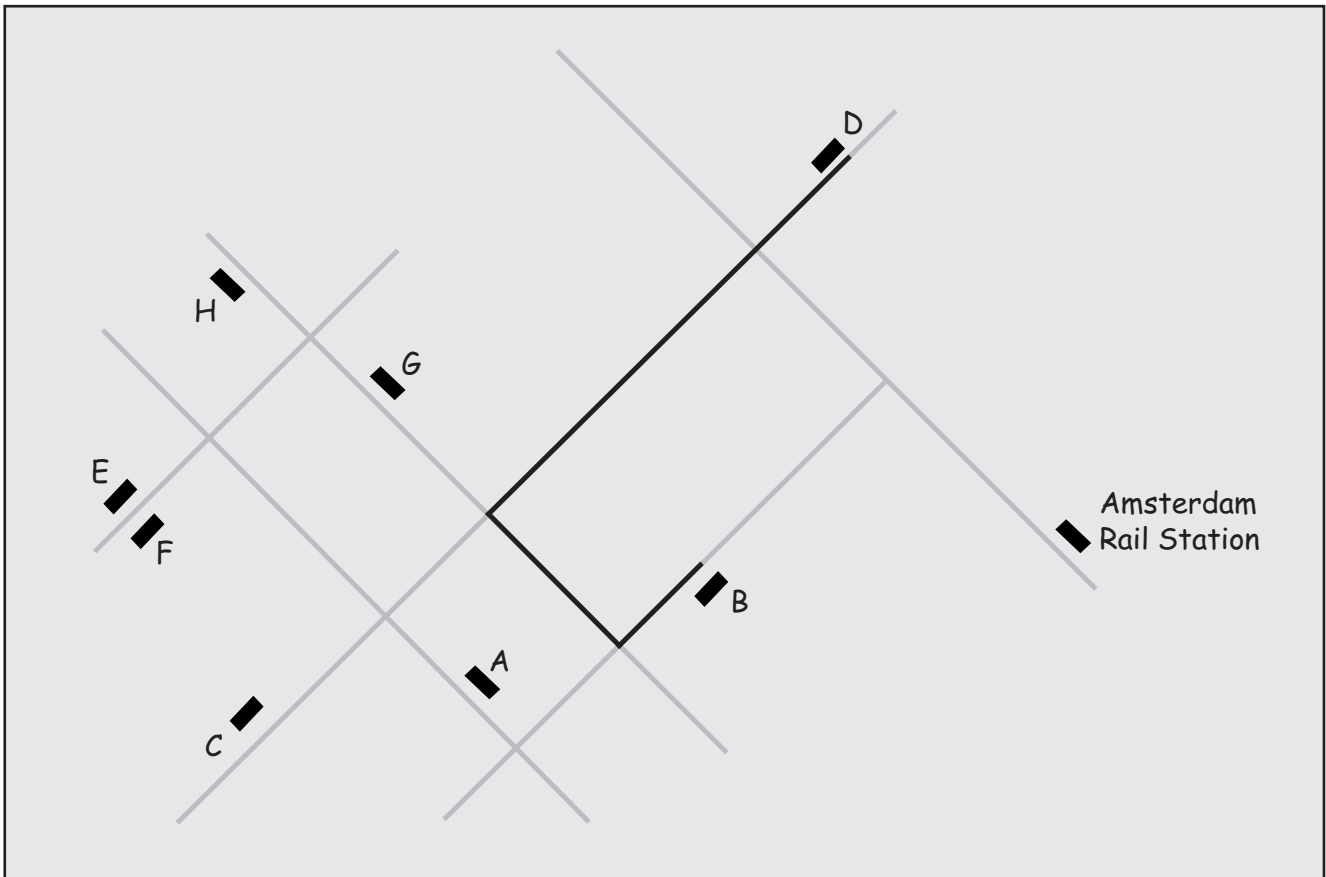- Section B starts with question 7.

FOR EXAMINER'S USE

Section B	

This question paper consists of 8 printed pages.

[Turn over

Formula Sheet

Area of trapezium $= \frac{1}{2}(a + b)h$
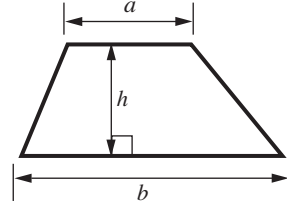
7 Two friends are on holiday in Amsterdam.
They have a sketch map showing some hotels and roads.

(a) Starting from the station, which hotel do these instructions lead to?

> **Turn right out of the station.**
>
> **Take the first left, then second right.**
>
> **Then take the first left. The hotel is on the right-hand side.**

(a) ....[1]

(b) The thick black line shows the route from Hotel D to Hotel B.
Complete these directions for this route, using right and left.

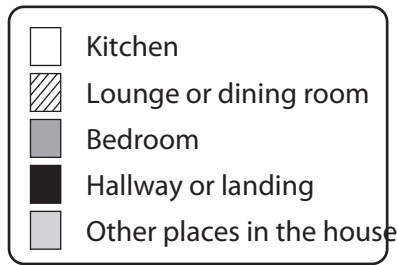**Turn ..RIGHT... out of Hotel D, take the second on the ....**

**then the first on the .... Hotel B is on your ....** [2]

3

[Turn over

8   This percentage bar shows where house fires started in the home in 2002.

Places where fires started (2002).

	Kitchen
▨	Lounge or dining room
▦	Bedroom
■	Hallway or landing
▨	Other places in the house

A photograph has been removed due to third party copyright restrictions

Details: A photograph of a fireman standing on the roof of a house which in on fire and another fireman climbing up a ladder onto the roof

0%   10%   20%   30%   40%   50%   60%   70%   80%   90%   100%
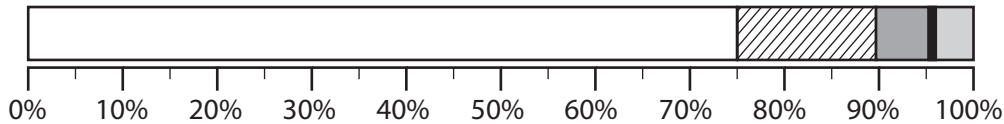
(a)   Estimate the percentage of the fires which started in kitchens.

(a) ....[1]

(b)   Estimate the percentage of fires which started in lounges or dining rooms.

(b) ....[1]

(c)   Estimate the percentage of fires which started
in bedrooms, hallways or landings.

(c) ....[1]

3

9   Here is a rule for changing a speed from miles per hour into metres per second.

> **Multiply the speed in miles per hour by four then divide by nine.**

International sprinters can reach a speed of 20 miles per hour.

What is this speed in metres per second?
Give your answer to the nearest whole number.

A photograph has been removed due to third party copyright restrictions

Details: A photograph of an athlete running

...................................metres per second [3]

3	

10   Safiq is baking a cake.

He opens a $\frac{1}{2}$ kg bag of flour.

He uses 50 g of the flour.

How much flour is left?

An image has been removed due to third party copyright restrictions

Details: An image of a 1/2 kg bag of flour

.... g [2]

2	

[Turn over

11 (a) Amy finds it hard to remember the last digit of her mobile phone number.
         She knows that it is odd.

     (i)   List all the digits it might be.

           ....

     (ii) She chooses one of these digits at random.
           Use arrows to mark the probability of each of these events on the line below.
           Label the arrows A , B and C.

     A: Amy picks an even digit.
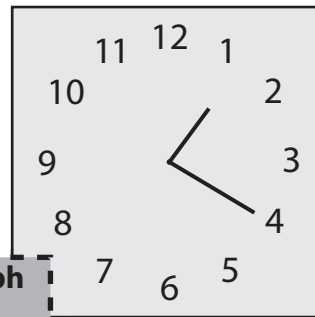
     B: Amy picks a digit greater than 5.

     C: Amy picks the correct digit.   [3]

           0   1

   (b) Jade started a phone call at a quarter to one.
        The picture shows the time she finished.

        How long was the phone call?

A photograph has been removed due to third party copyright restrictions

Details: A photograph of a woman using a mobile phone

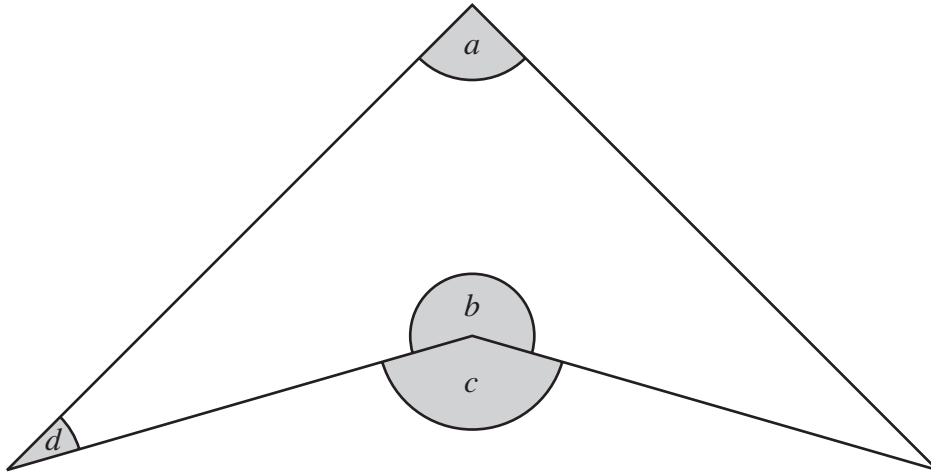   (b) .... minutes [2]

   (c) Jade's phone company charges 8p for each video clip she sends.

        How many video clips could she send for 50p?

                                                           (c) ....[2]

7

12 This shape is called an arrowhead.

Complete these sentences.

Angle .... is an acute angle.

Angle .... is a reflex angle.

Angle .... is a right angle.   [3]

TURN OVER FOR QUESTION 13
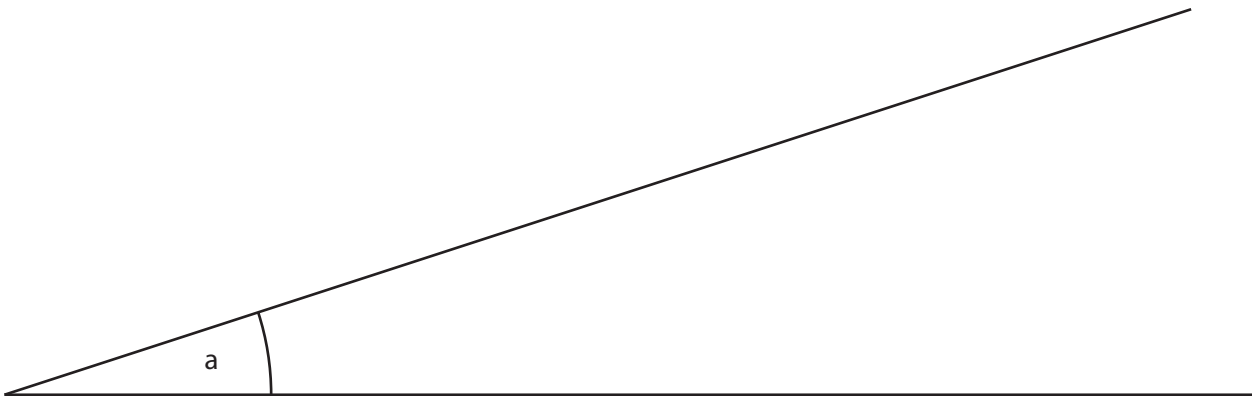
13   In this picture the traffic cones are 1 m high.

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Details: A photograph of a stretch limo
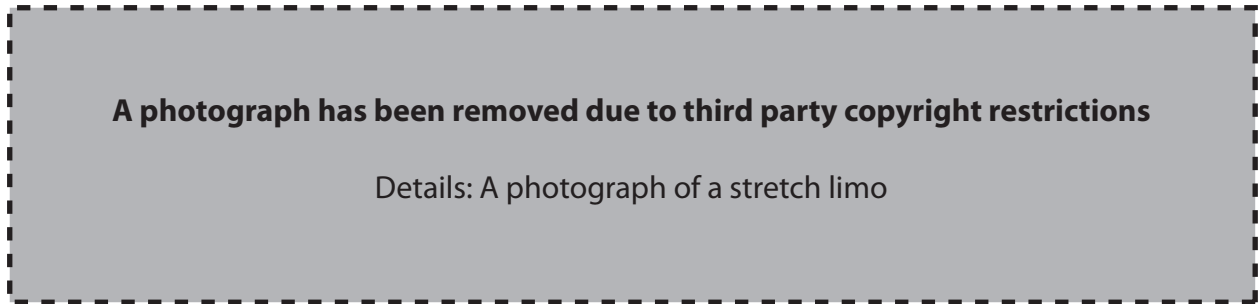
(a)   (i)   Estimate the height of the stretch limo.

(a)(i) .... m [1]

(ii)   Estimate the length of the stretch limo.

(ii) .... m [2]

(b)   This diagram shows the slope of one of the steepest roads in the world.
Measure the angle marked a.

(b) .... ° [1]

4