B276A

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M6 – SECTION A

M6

MONDAY 21 JANUARY 2008

Morning
Time: 30 minutes

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

Candidate Forename		Candidate Surname	

Centre Number		Candidate Number	

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or 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.
- Do **not** write outside the box bordering each page.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- 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.
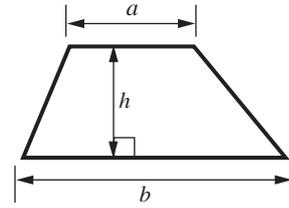
WARNING

You are not allowed to use a calculator in Section A of this paper.

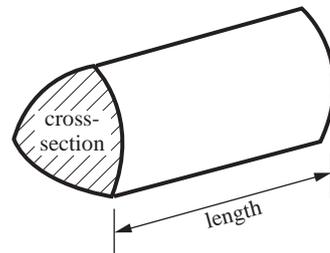| FOR EXAMINER'S USE	
SECTION A	
SECTION B	
TOTAL	

This document consists of **8** printed pages.

Formulae Sheet

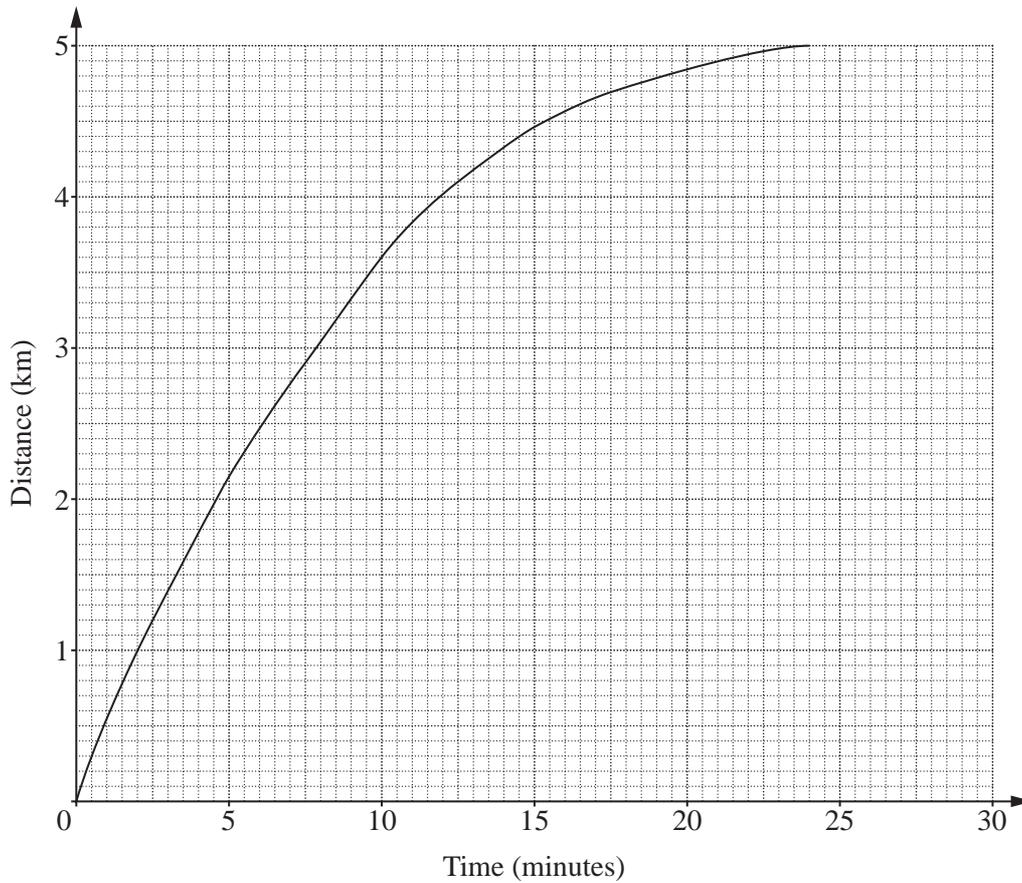**Area of trapezium** $= \frac{1}{2}(a + b)h$

Volume of prism = (area of cross-section) × length

PLEASE DO NOT WRITE ON THIS PAGE

1 Jomo and Kwame took part in a 5 km race.
This graph represents Jomo's run.

(a) Kwame set off at the same time as Jomo.
He ran at a constant speed and took 19 minutes to complete the race.

Add a straight line to the graph to represent his run. [2]

(b) Kwame overtook Jomo during the race.

How far had they each run at that time?

(b) .... km [1]

[Turn over

2 Runner beans cost £1·70 per kilogram.
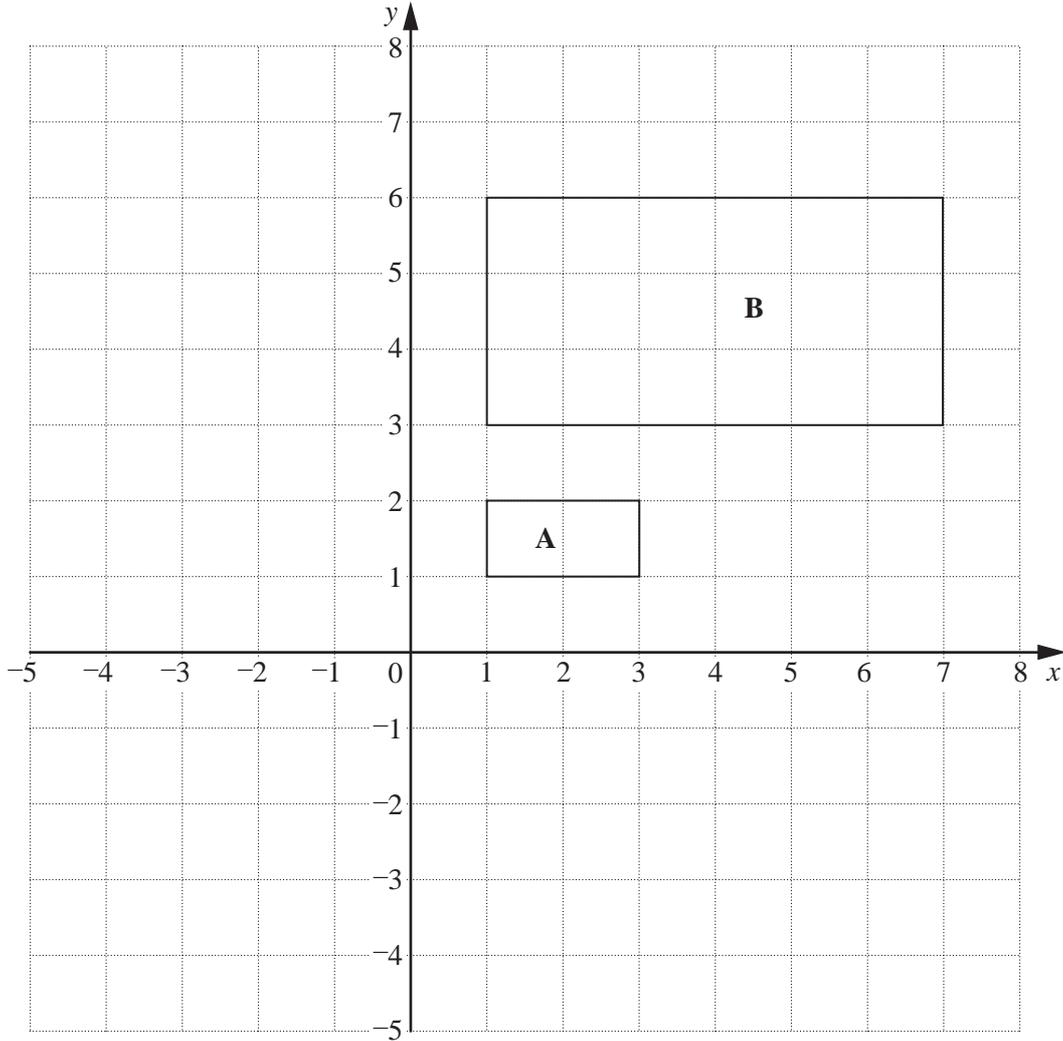

Paul bought 2·4 kg of runner beans.
He paid with a £5 note.

Work out how much change he should get.
You must show your working.

.... p [4]

3

(a) Reflect rectangle **A** in the *x*-axis.
Label the image **C**. [1]

(b) Translate rectangle **A** by 4 units left and 3 units down.
Label the image **D**. [1]

(c) Rectangle **B** is an enlargement of rectangle **A**.

Complete these statements.
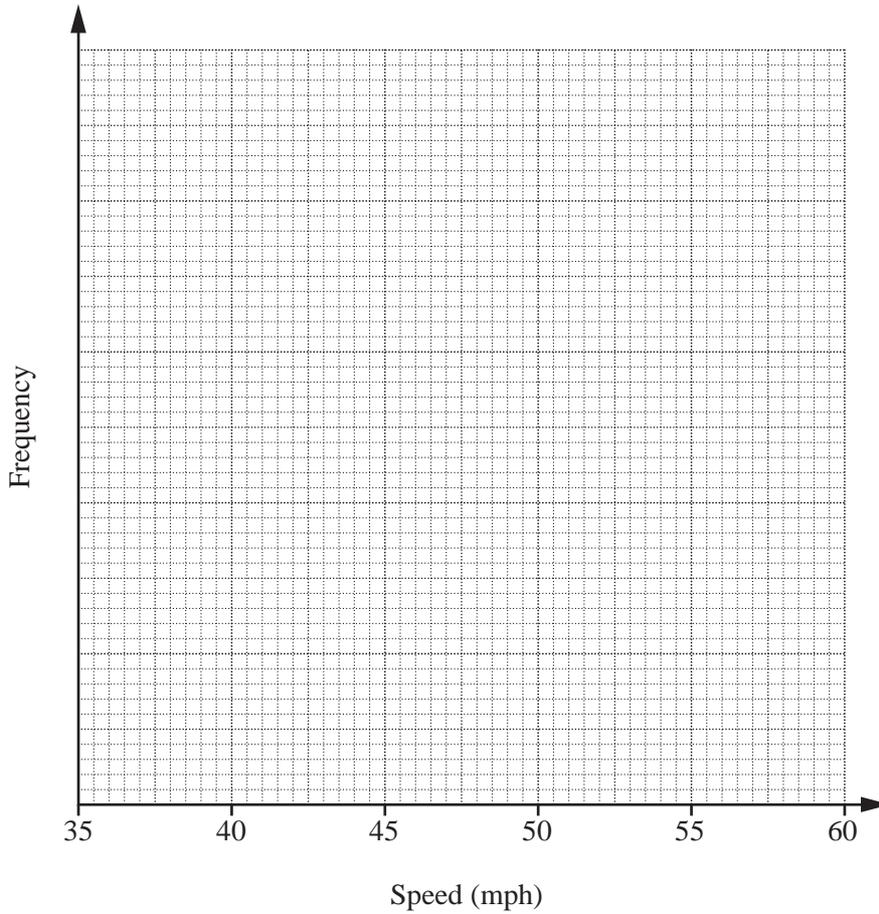
(i) The scale factor of this enlargement is .... [1]

(ii) The centre of enlargement is (.............. , ...) . [1]

4 The police recorded the speeds, in miles per hour, of 80 cars passing through roadworks. Their speeds are summarised in the table below.

Speed (v mph)	$35 < v \leqslant 40$	$40 < v \leqslant 45$	$45 < v \leqslant 50$	$50 < v \leqslant 55$	$55 < v \leqslant 60$
Frequency	12	39	18	7	4

(a) Draw a frequency diagram to show this information.

[3]

(b) Write down the modal class for these speeds.

(b) .... [1]

(c) One of these 80 cars is picked at random.

What is the probability that its speed is

(i) 40 mph or less,

(c)(i) .... [1]

(ii) more than 50 mph?

(ii) .... [2]

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7
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5 Work out.

$$\frac{2}{5} \times \frac{3}{4}$$

Give your answer as a fraction in its simplest form.

.... [2]

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2
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TURN OVER FOR QUESTION 6

[Turn over

6 Solve.

    (a) $2x - 7 = 12$

<div align="right">

(a)...................................... [2]

</div>

    (b) $7x + 13 = 2x + 3$

<div align="right">

(b) .... [3]

</div>

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5	

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