GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)

M3 **2333A**

MODULE M3 – SECTION A

MONDAY 22 JANUARY 2007

Morning

Time: 30 minutes

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

Candidate Name	

Centre Number					

Candidate Number				

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre Number and Candidate Number in the boxes above.
- Answer **all** the questions.
- 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.
- 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 outside the box bordering each page.
- WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.
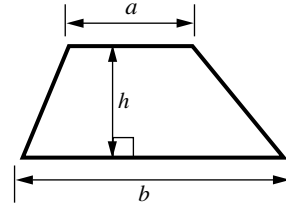- The total number of marks for this Section is 25.

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 **10** printed pages and **2** blank pages.

[Turn over

2

Formula Sheet

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

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3

1 Work out.

   (a) 2·1 × 4

                            (a)...................................... [1]

   (b) 19 ÷ 100

                            (b) .... [1]

   (c) 3·6 ÷ 6

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

   (d) 3 + 2 × (4 + 1)

                            (d) .... [2]

5

2 Here is a sketch of a model tower crane.
It is made from cubes.
You can see all the cubes.

B

A

D

C

(a) Each cube in the model has a mass of 4 g.

What is the total mass of the model?

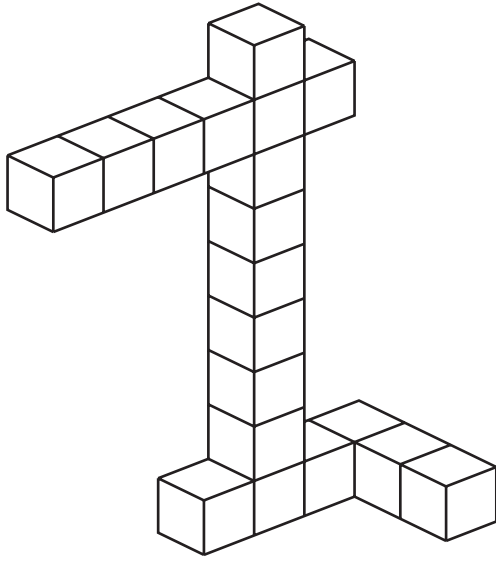**(a)**.............................. g [2]

(b) Complete each of these sentences.
Use the letters from the diagram.
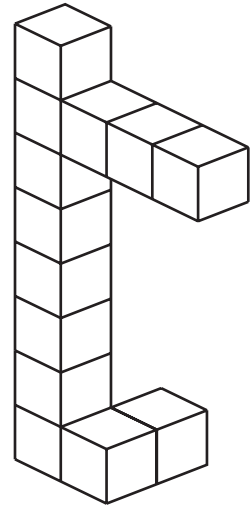
(i) This is the view looking along arrow ....

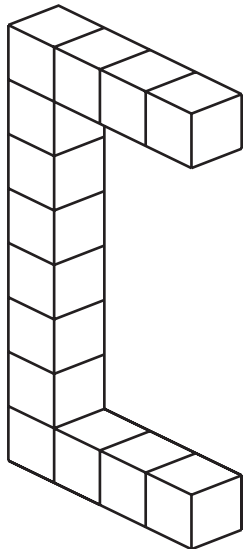**(ii)** This is the view looking along arrow ....

[2]

(c) Put a tick (✓) under each model that has reflection symmetry.
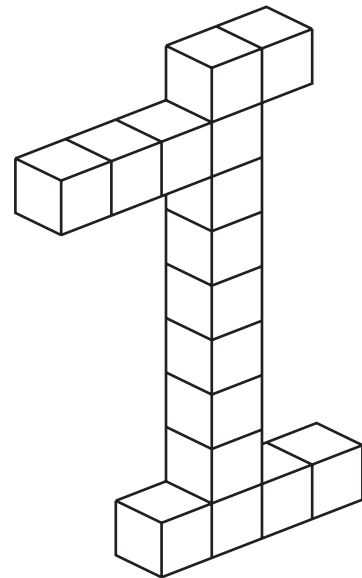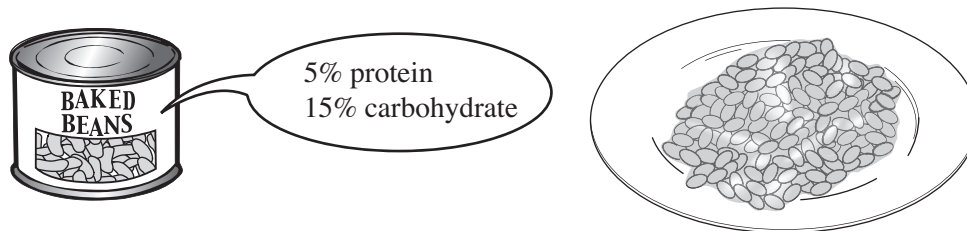Put a cross (✗) under each model that **does not** have reflection symmetry.

....

....

....

....

[2]

6

[Turn over

6

3

(a) What weight of protein is there in 200 g of baked beans?

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

(b) What weight of carbohydrate is there in 200 g of baked beans?

(b) .... g [1]

| 3 | |

4 **(a)** This picture shows a woman with a ladder.

Estimate the length of the ladder.

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

(b)

Safety First!

The distance of the foot of a ladder from the wall should be one quarter of the height to be reached.

Height to be reached

Distance of foot of ladder from wall.

(i) A ladder has to reach a height of 8 m.

Use the rule to find the distance of the foot of the ladder from the wall.

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

(ii) The distance of the foot of a ladder from a wall is 80 cm.

Use the rule to find the height the ladder will reach.
Give your answer in metres.

(ii)............................ m [2]
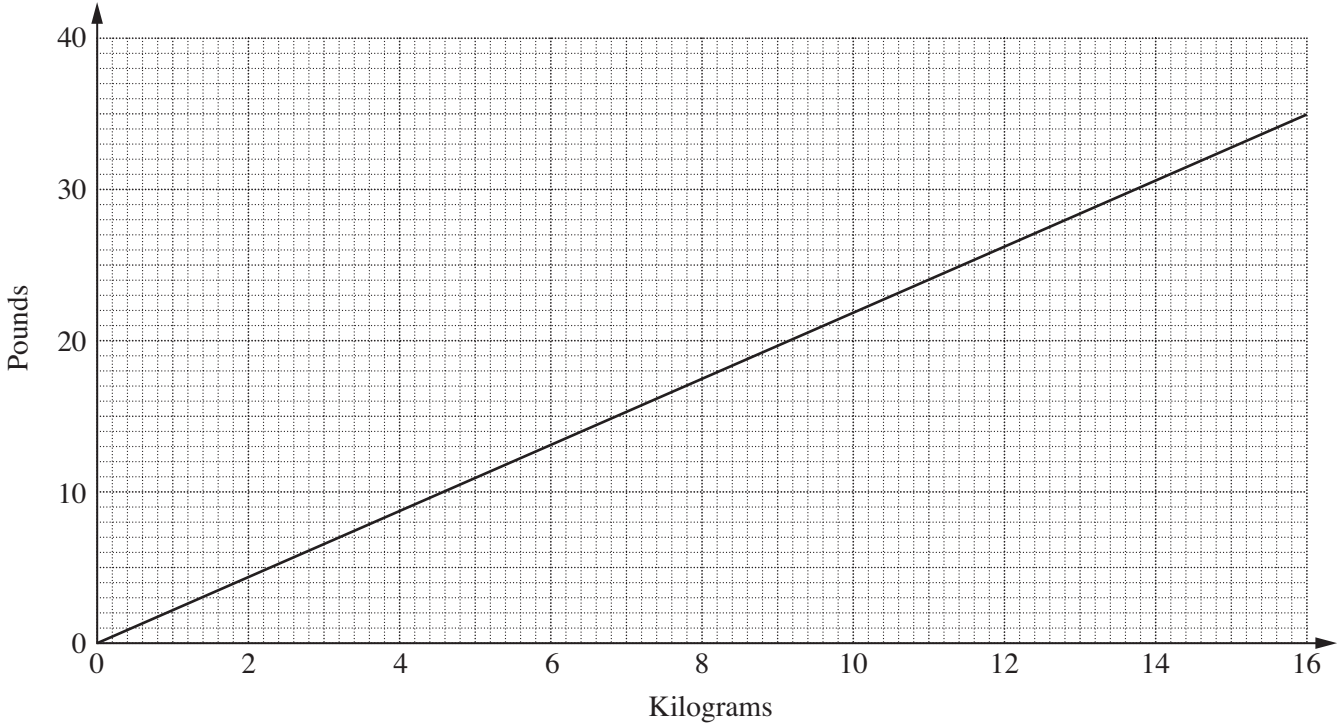
[Turn over

(c) Neta's step ladder is 6 feet high.

Roughly, what is 6 feet in metres?

(c).................................. m [1]

(d)

Conversion graph for pounds to kilograms

(i) A ladder weighs 15 kilograms.

Use the conversion graph to convert 15 kilograms into pounds.

(d)(i).....................pounds [1]

(ii) Which is heavier, a ladder weighing 20 pounds or one weighing 10 kilograms?
Give a reason for your answer.

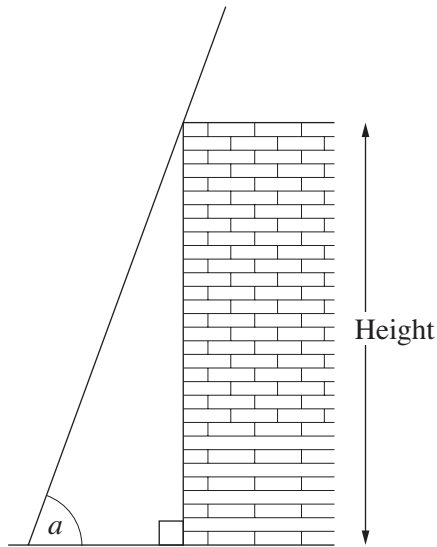.......................... because ....

....

.... [2]

(e) This is a scale drawing of a ladder and a wall.
The wall is at right-angles to the ground.

Scale: 1 cm to 1 m

(i) What is the height of the **real** wall?

Give the units of your answer.

(e)(i) .... [2]

(ii) Estimate the size of angle a, the angle
between the ladder and the ground.

(ii) .... ° [1]

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