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General Certificate of Secondary Education
June 2006

MATHEMATICS (MODULAR) (SPECIFICATION B)   33003/IA
Module 3   Intermediate Tier Section A

Wednesday 28 June 2006   9.00 am to 9.40 am

AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

For this paper you must have:
- a calculator
- mathematical instruments
- a treasury tag

Time allowed for Section A: 40 minutes

Instructions

- Use blue or black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Use a calculator where appropriate.
- Do all rough work in this book.
- This paper is divided into two sections: Section A and Section B.
- After the 40 minutes allowed for Section A, you must put your calculator on the floor under your seat. You will then be given Section B.
- When you have answered Section B you may work again on Section A but you may **not** use your calculator. It must remain on the floor under your seat.
- At the end of the examination tag Section A and Section B together with Section A on top.

Information

- The maximum mark for Section A is 32.
- The marks for questions are shown in brackets.
- You may ask for more answer paper. This must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

33003/IA

Answer **all** questions in the spaces provided.

1 Calculate $0.8^2 + 1.75^3$

(a) Write down your full calculator display.

Answer .... *(1 mark)*

(b) Round your answer to part (a)

(i) to one significant figure

....

Answer .... *(1 mark)*

(ii) to one decimal place.

....

Answer .... *(1 mark)*

2 Charlie buys two kilograms of biscuits.
Biscuits cost £1.70 per kilogram.
He also buys 0.5 kilograms of nuts.
The total cost of the biscuits and the nuts is £4.15

What is the cost of one kilogram of nuts?

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....

Answer £ .... *(4 marks)*

3 (a) A lawnmower is advertised as shown.

LAWNMOWER

£76 plus VAT
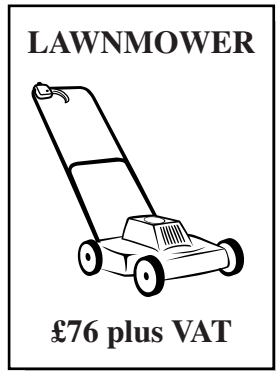
VAT is added at 17.5%.

Work out the cost of the lawnmower including VAT.

....

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....

Answer £ .... *(3 marks)*

(b) A shop has 40 lawnmowers for sale.
They sell 15 in one day.

What percentage is 15 out of 40?

....

....

....

Answer .... % *(2 marks)*

12

Turn over ▶

4 Jeff is buying cartons of orange juice.
The cartons cost 34 pence each.

Show that he can buy more than twice as many cartons with £10 as he can with £5.

....

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....

(3 marks)

5 (a) Roma invests £400 for three years at 4% compound interest.

Show that, at the end of the three years, she has a total investment of £449.95 to the nearest penny.

....

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(3 marks)

(b) Calculate the percentage increase from £400 to £449.95

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....

Answer .... % *(3 marks)*

6 (a) Calculate 3^6

Answer .... *(1 mark)*

(b) A trailer weighs 729 kilograms correct to the nearest kilogram.

(i) Write down the least possible weight of the trailer.

Answer .... kilograms *(1 mark)*

(ii) Write down the greatest possible weight of the trailer.

Answer .... kilograms *(1 mark)*

7 Vivian and Jack shared the driving to their holiday cottage in the ratio 3 : 5
Jack drove further than Vivian.
The total distance travelled was 440 miles.

How far did Jack drive?

....

....

....

Answer .... miles *(2 marks)*

Turn over for the next question

14

Turn over ▶

8 There are 22 million houses in the United Kingdom.

(a) Write 22 million in standard form.

Answer .... *(1 mark)*

(b) On average each of these 22 million houses has a value of £82 000.

What is the total value of all these houses?
Give your answer in standard form.

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Answer £ .... *(2 marks)*

9 A DVD player is on sale at £97.20
This is a 10% reduction of the previous price.

What was the price of the DVD player before the reduction?

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Answer £ .... *(3 marks)*

END OF SECTION A

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There are no questions printed on this page