

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M1 (SECTION B)

B271B

Candidates answer on the Question Paper

OCR Supplied Materials:
None

- Other Materials Required:**
- Geometrical instruments
 - Tracing paper (optional)
 - Electronic calculator

Monday 21 June 2010
Afternoon

Duration: 30 minutes



| | | | |
|--------------------|--|-------------------|--|
| Candidate Forename | | Candidate Surname | |
|--------------------|--|-------------------|--|

| | | | | | | | | | | |
|---------------|--|--|--|--|--|------------------|--|--|--|--|
| Centre Number | | | | | | Candidate Number | | | | |
|---------------|--|--|--|--|--|------------------|--|--|--|--|

MODIFIED LANGUAGE

INSTRUCTIONS TO CANDIDATES

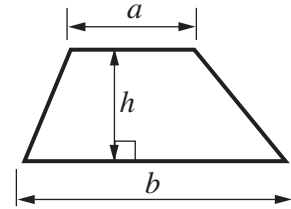
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working.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

INFORMATION FOR CANDIDATES

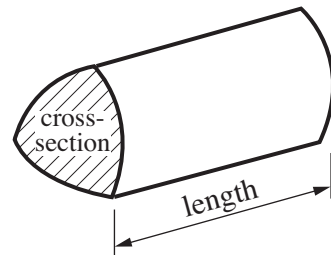
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 6.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **12** pages. Any blank pages are indicated.

Formulae Sheet

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



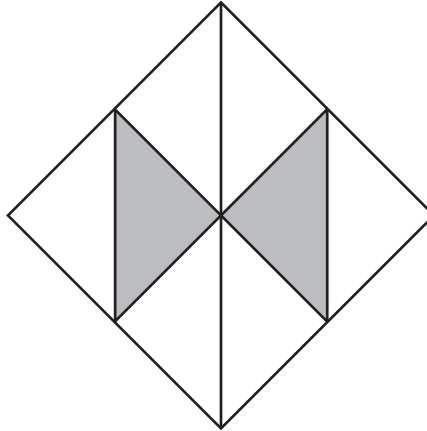
$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



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6 Here is a square.

What fraction of the square is shaded?



..... [1]

7 There are 4 runners in a relay team.

Anita always runs first.

Benita, Carli and Di always argue about who should run second, third and fourth.

Complete this list to show all the orders in which Benita (B), Carli (C) and Di (D) could run. One has been done for you.

You may not need to use all the rows.

| Second | Third | Fourth |
|--------|-------|--------|
| B | C | D |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

[2]

8 Kalif wants to buy this metal detector.



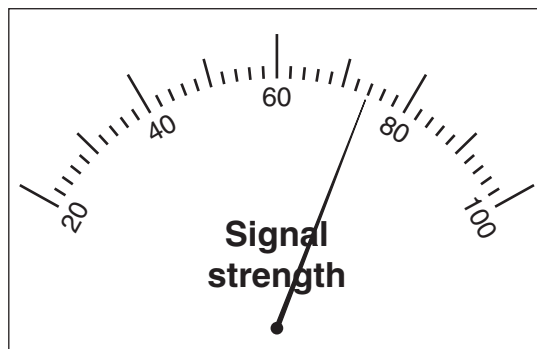
(a) He already has £15 and wants to save the rest in 12 weeks.

How much should he save each week?

(a) £ [3]

(b) Kalif buys the metal detector.
He explores some waste ground.

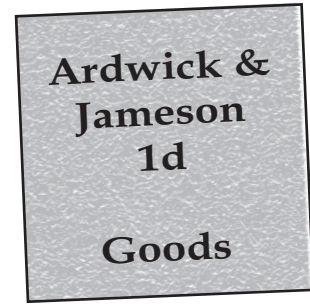
What is the signal strength shown on this scale?



(b) [1]

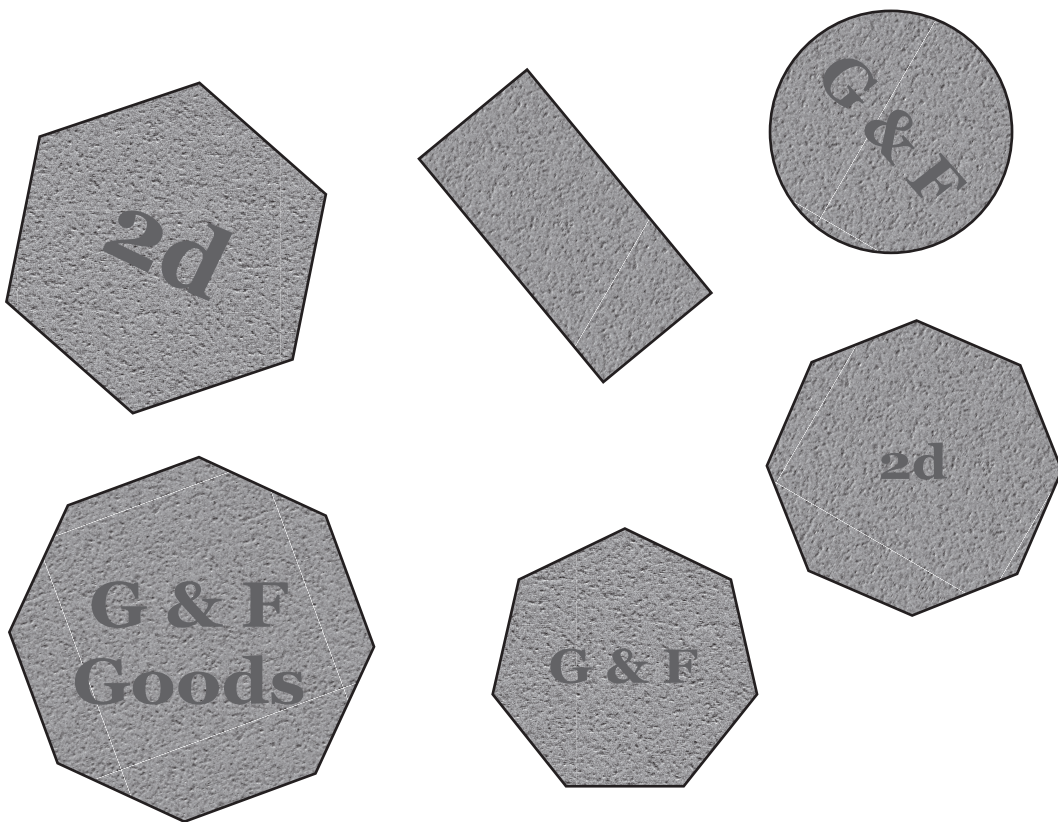
- (c) Kalif finds this square metal token.
The token is over 200 years old.
It was used instead of money in some factories.

Measure the length of one of the sides of the token.
Give the units of your answer.



(c) [2]

- (d) Kalif found some more tokens.

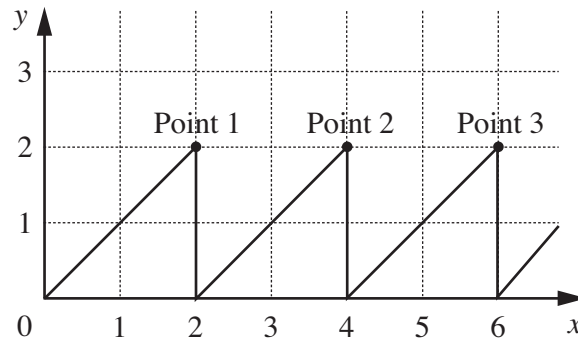


- (i) Measure the diameter of the circular token in millimetres.

(d)(i) mm [1]

- (ii) Put a ring round one of the tokens which is an octagon. [1]

9 Here is the start of a saw-tooth pattern drawn on a grid.



(a) Complete this table showing the coordinates of points on the saw-tooth.

| | | | |
|-------------|-----------------|-----------------|-----------------|
| Point | 1 | 2 | 3 |
| Coordinates | (..... ,) | (..... ,) | (..... ,) |

[2]

(b) (i) What will the coordinates of Point 4 be?

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

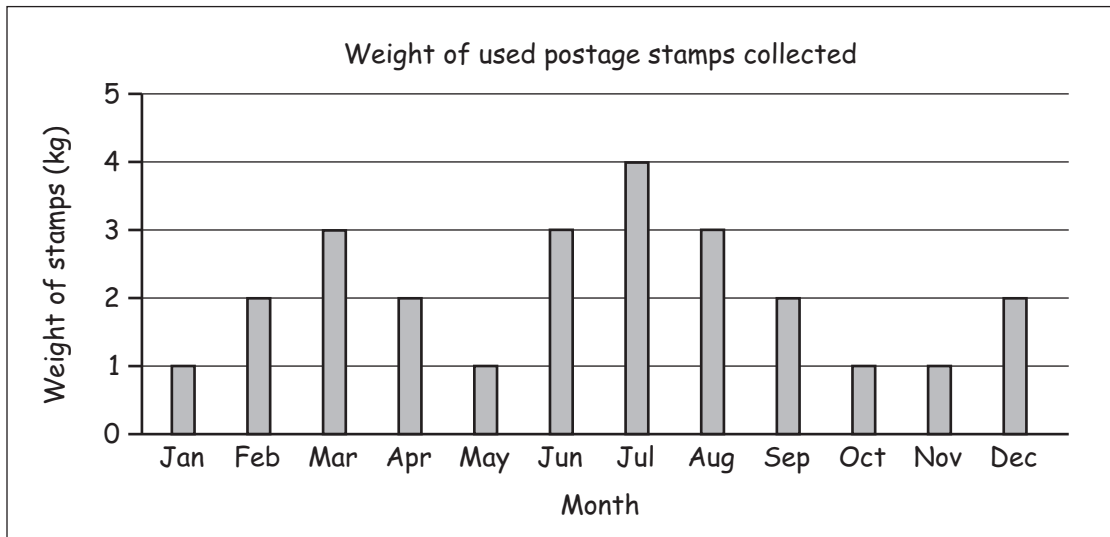
(ii) How did you work out your answer to part (i)?

.....
 [1]

10 Shareen and Josh work in the post room of a builders' merchant.

(a) They collect used stamps for charity.

This chart shows how much they collected last year.



(i) What weight of stamps did they collect in May?

(a)(i) kg [1]

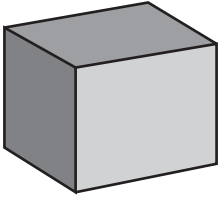
(ii) Used stamps are worth £2 per kg to charities.

How much were the stamps they collected last year worth altogether?

(ii) £ [3]

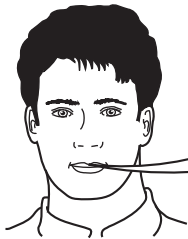
(b) This table shows the cost of sending a parcel.

| Weight not over... | Cost |
|--------------------|--------|
| 2 kg | £4.20 |
| 4 kg | £6.85 |
| 6 kg | £9.30 |
| 8 kg | £11.40 |
| 10 kg | £12.24 |
| 20 kg | £14.26 |

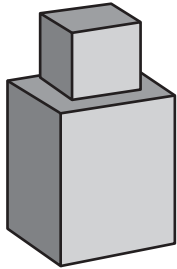


Shareen needs to post 10 kg of nails.
This will cost £12.24 for one parcel.

Josh says:



It would be cheaper to send the nails in two separate parcels with a total weight of 10 kg.



Is Josh correct?
Show working to explain your answer.

Write
Yes or No.

..... because

.....

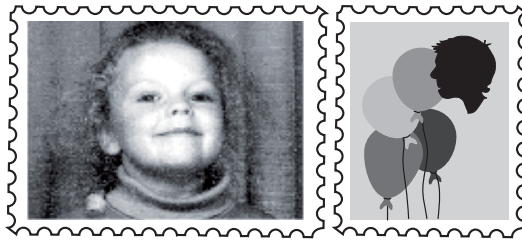
.....

.....

..... [3]

(c) Josh has a sister. It is her 21st birthday soon.

Josh wants to buy her some special postage stamps that show her as a baby.



He can order these on the Internet.
The special stamps cost £7.50 for a sheet of 10.
Normal stamps costs 36p each.

How much more does a sheet of 10 special stamps
cost than 10 normal stamps?



(c) £ [3]

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