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| Candidate forename | | Candidate surname | |
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| Centre number | | | | | | Candidate number | | | | |
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GCSE**

A501/01

MATHEMATICS A

Unit A (Foundation Tier)

THURSDAY 19 JANUARY 2012: Afternoon

DURATION: 1 hour

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Scientific or graphical calculator

Geometrical instruments

Tracing paper (optional)

| |
|---|
| <p>You are permitted to use a calculator for this paper.</p> |
|---|

This paper has been pre modified for carrier language

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

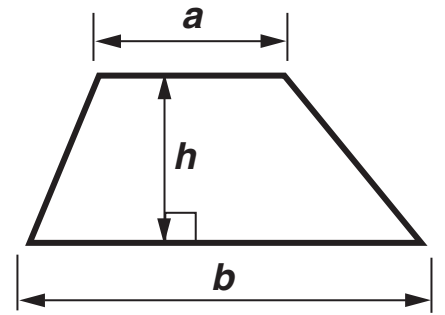
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. HB pencil may be used for graphs and diagrams only.**
- **Answer ALL the questions.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.**
- **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

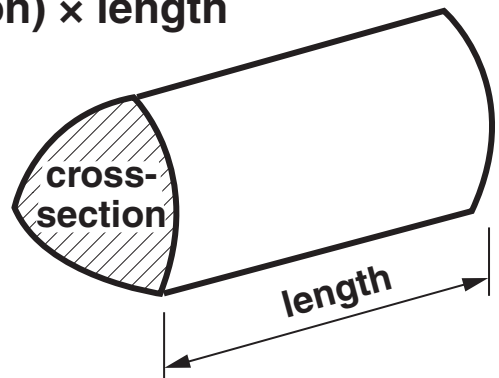
- **The number of marks is given in brackets [] at the end of each question or part question.**
- **The total number of marks for this paper is 60.**

FORMULAE SHEET: FOUNDATION TIER

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



Volume of prism = (area of cross-section) \times length



1 On 11th September 2010, the attendance at Arsenal's football match was 59876.

(a) Round 59876 correct to the nearest hundred.

(a) _____ [1]

(b) The attendance at Everton's match that day was 23320 fewer than at Arsenal's match.

What was the attendance at Everton's match?

(b) _____ [2]

**(c) The attendance at Fulham's match that day was
twenty-five thousand two hundred
and eighty.**

Write this number in digits.

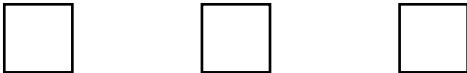
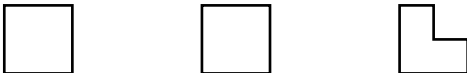



(c) _____ [1]


(d) The attendance at West Ham's match that day was 33 014.

Write 33 014 in words.

[1]

- 2 (a) This pictogram represents the number of packets of flower bulbs that a shop sold one morning.

| | |
|------------------|---|
| Crocuses |  |
| Daffodils |  |
| Tulips |  |
| Irises | |
| Hyacinths |  |
| Other |  |

Key:  = 4 packets

- (i) How many packets of Hyacinths were sold?

(a)(i) _____ [1]

- (ii) How many MORE packets of Daffodils were sold than packets of Tulips?

(ii) _____ [1]

(iii) 5 packets of Irises were sold.

Complete the row of the pictogram for Irises. [1]

(b) Here are the numbers of packets of Crocuses that the shop sold each day in one week.

23 16 31 13 9 20 21

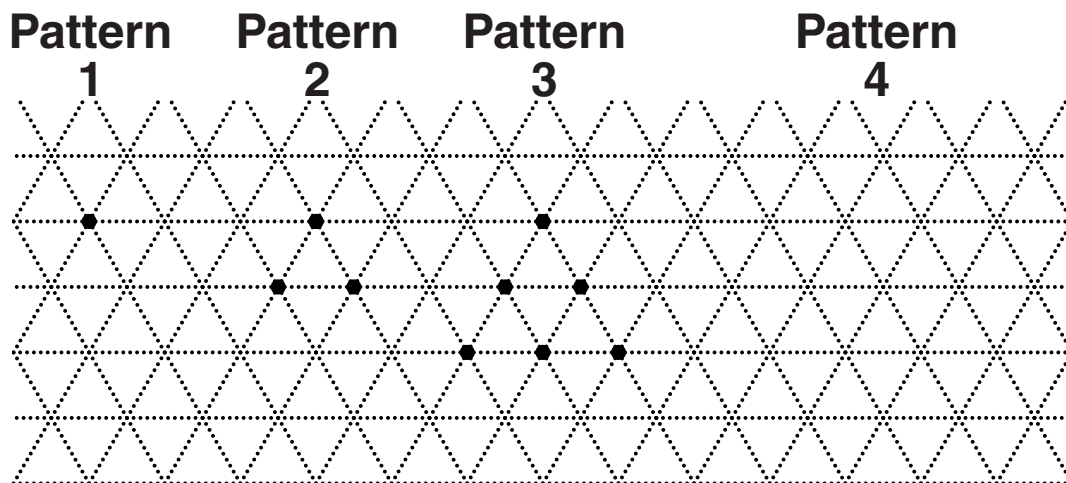
(i) Calculate the mean number of packets sold in a day.

(b)(i) _____ [3]

(ii) Find the range of the numbers of packets of Crocuses sold that week.

(ii) _____ [1]

3 Here are the first three patterns in a sequence of dots.



(a) Draw Pattern 4 in the sequence. [1]

(b) How many dots are there in Pattern 7?
Explain how you decide.

_____ dots because _____

_____ [2]

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- 4 **Jean buys a new greenhouse.**
She looks at the price list for the ‘extras’ she could buy for it.

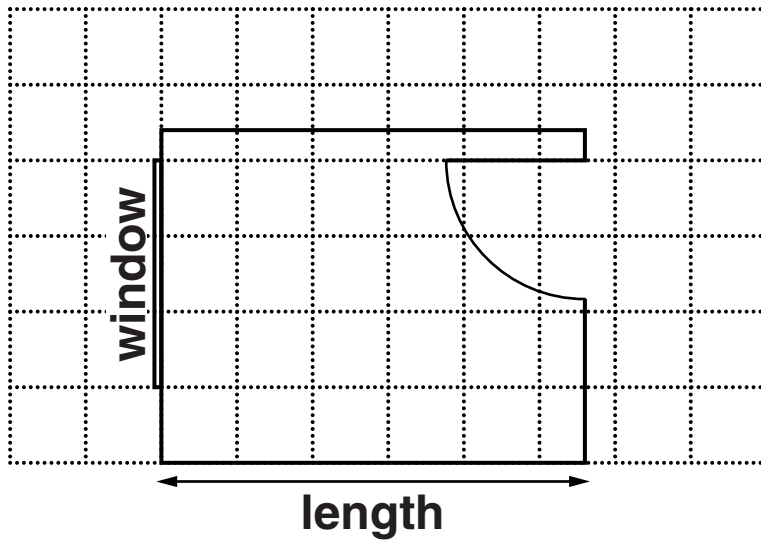
| Item | Price of item |
|---------------------------------|----------------------|
| 1-tier staging 4 ft long | £39 |
| 2-tier staging 4 ft long | £59 |
| 1-tier staging 2 ft long | £29 |
| 2-tier staging 2 ft long | £39 |
| 4 ft top extension | £29 |
| Potting bench | £39 |
| Paraffin heater | £39 |
| Rainwater kit | £11 |
| Watering system | £49 |
| Automatic vent opener | £27 |

Complete Jean's order form for the 'extras' she decides to buy.

| Item | Price of item | Quantity | Price of order |
|-----------------------------|----------------------|-------------------|-----------------------|
| 1-tier staging 4 ft long | | 1 | |
| 2-tier staging 4 ft long | | 1 | |
| 4 ft top extension | | 2 | |
| Rainwater kit | | 2 | |
| Automatic vent opener | | 1 | |
| | | Total cost | £ |

[4]

- 5 Jo is moving house.
This is a scale drawing of her new bedroom.
It shows the positions of the door and the window.
The scale is 1 cm REPRESENTS 50 cm.



- (a) Find the length of the actual room, in metres.

(a) _____ m [2]

**(b) Jo has a bed 200 cm long and 90 cm wide.
She has a desk 150 cm long and 50 cm wide.**

**Draw accurately on the scale drawing possible
positions for the bed and the desk.**

[4]

- 6 This chart shows the distances, in miles, between some cities.
For example, the distance between Cambridge and Oxford is 82 miles.

| | | | | | | |
|-------------------|------------------|----------------|----------------|---------------|------------------|-------------|
| Birmingham | | | | | | |
| 97 | Cambridge | | | | | |
| 98 | 95 | Lincoln | | | | |
| 160 | 63 | 103 | Norwich | | | |
| 68 | 82 | 132 | 146 | Oxford | | |
| 91 | 122 | 47 | 148 | 142 | Sheffield | |
| 133 | 154 | 79 | 180 | 184 | 57 | York |

(a) Find the distance between Lincoln and Sheffield.

(a) _____ miles [1]

**(b) Avron lives in Norwich.
He drives from Norwich to Birmingham.
He then drives from Birmingham to Sheffield.
On his way home, he drives straight from Sheffield
to Norwich.**

**How many miles MORE was his journey to
Sheffield than his journey back to Norwich?
Show how you decide.**

(b) _____ miles [3]

**7 Anna has 1 pint of liquid.
She uses some of the liquid for 20 experiments.**

She does 16 experiments, each using 8 ml of the liquid.

She does 4 experiments, each using 20 ml of the liquid.

How many millilitres of the liquid does she have left after finishing all the experiments?

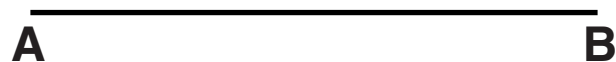
Use the fact that 1 pint = 0.568 litres.

_____ ml [4]

- 8 In part (a) of this question, use a ruler and a pair of compasses.
Do not rub out your construction lines.

Triangle ABC has $AB = 7.5$ cm, $BC = 6.4$ cm and $AC = 8.1$ cm.

- (a) Make an accurate drawing of triangle ABC.
Side AB has been drawn for you.



[2]

- (b) Measure angle B in your triangle.

(b) _____ ° [1]

**9 An electronic device squeaks every 25 seconds.
Its battery lasts for 9 months.**

**How many times does the device squeak before its
battery must be replaced?**

Show clearly any assumptions you make.

_____ [4]

10 Mike is trying to choose between these special offers in a supermarket.

**10-can pack of Diet Cola
for £2.50**

**6-can pack of Diet Cola
for £2.85**

**Buy one pack
get one pack free!**

**(a) Work out which offer is better value for money.
Show how you decide.**

[3]

**(b) Give one reason why buying the best value offer
may not be the most suitable choice for Mike.**

[1]

11 (a) Simplify.

$$2a + 4a - a$$

(a) _____ **[1]**

(b) Factorise.

$$21y - 3y^2$$

(b) _____ **[2]**

12 Calculate.

$$\frac{15.6 + 81.97}{4.3 \times 9.84}$$

Give your answer correct to 2 decimal places.

_____ [2]

**13 John makes jam to sell at a charity fair.
He sells the jam at a price so that**

cost of making it : profit for charity

is in the ratio 2 : 3.

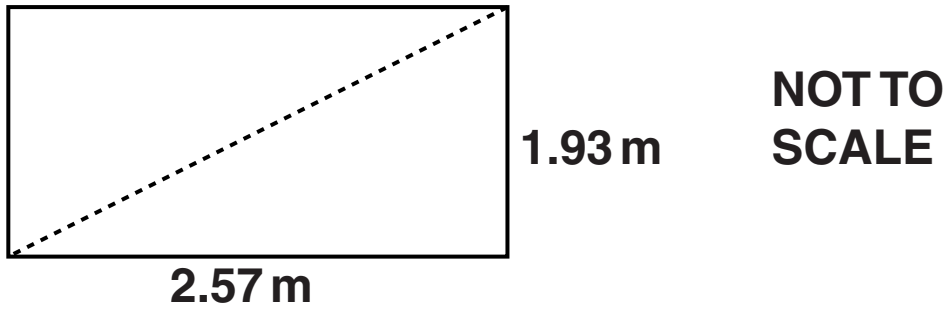
He sells all the jam for a total of £28.

Calculate the cost of making the jam and the profit for charity.

Cost £ _____

Profit £ _____ [3]

- 14 Dave is building a greenhouse.
The base measures 2.57 m by 1.93 m.



Dave checks that the base is a rectangle by measuring the diagonals.

Calculate the length that a diagonal should be.

_____ m [3]

15 (a) Solve.

$$3(2x - 1) = 6$$

(a) _____ **[3]**

(b) Find the value of $3y^2 + 5$ when

(i) $y = 2.6$,

(b)(i) _____ **[1]**

(ii) $y = -4$.

(ii) _____ [1]

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