

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M2 – SECTION A

B272A

Candidates answer on the Question Paper

OCR Supplied Materials:
None

Other Materials Required:

- Geometrical instruments
- Tracing paper (optional)

Monday 8 March 2010
Morning

Duration: 30 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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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, however additional paper may be used if necessary.

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**.
- This document consists of **12** pages. Any blank pages are indicated.

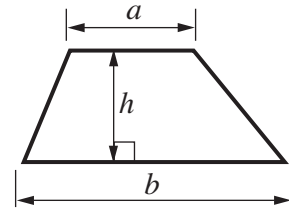
WARNING



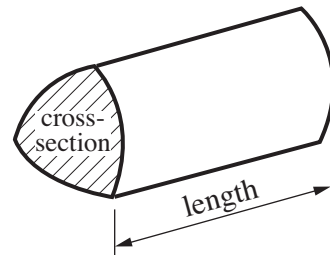
No calculator can be used for Section A of this paper

Formulae Sheet

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



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



PLEASE DO NOT WRITE ON THIS PAGE

- 1 (a) The first mobile phones were very heavy.
Some weighed as much as 2000 g.

What is 2000 g in kilograms?



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

- (b) The smallest mobile phone has a screen 23 mm long.

Change 23 mm into centimetres.







(b)..... cm [1]

- (c) Tanya wants a new mobile phone.
She has £20 from a birthday present.
Tanya saves £5 each week from her part-time job.

How much will she have **altogether** after 8 weeks?

(c) £..... [2]


- (d) Tanya looks at a mobile phone site on the Internet.
She can afford any one of these models.

Product	Ratings	Product	Ratings
	Sound ★★★ Reception ★★★★★ Battery ★★★ Ease of use – calling ★★★ Ease of use – texting ★★★		Sound ★★★ Reception ★★★★★ Battery ★★★ Ease of use – calling ★★★★★ Ease of use – texting ★★★
Click for price and details		Click for price and details	
	Sound ★★★★★ Reception ★★★★★ Battery ★★★★★ Ease of use – calling ★★★★★ Ease of use – texting ★★★★★		Sound ★★★★★ Reception ★★★★★ Battery ★★★★★ Ease of use – calling ★★★ Ease of use – texting ★★★★★
Click for price and details		Click for price and details	
	Sound ★★★ Reception ★★★★★ Battery ★★★ Ease of use – calling ★★★ Ease of use – texting ★★		Sound ★★★★★ Reception ★★★ Battery ★ Ease of use – calling ★★★★★ Ease of use – texting ★★★
Click for price and details		Click for price and details	

- (i) Put a cross (X) next to the phone with the lowest battery rating. [1]
- (ii) Tanya wants a phone which is easy to use for texting and which has a good battery rating.
Circle the phone that would be best for her. [2]

(e) Tanya checks the User Reviews for the model she wants, the A11 phone.

What Mobile: A11

	→ USER REVIEWS	Star Rating
	Reviewed by <u>jayjay</u>	★★★★★
	Reviewed by <u>ladymare</u>	★★
	Reviewed by <u>modgirl</u>	★★★★★
	Reviewed by <u>storkie</u>	★★
	Reviewed by <u>bigears</u>	★★★

(i) Write down the mode number of stars for the A11 phone ratings.

(e)(i) [1]

(ii) Find the median number of stars for the A11 phone ratings.

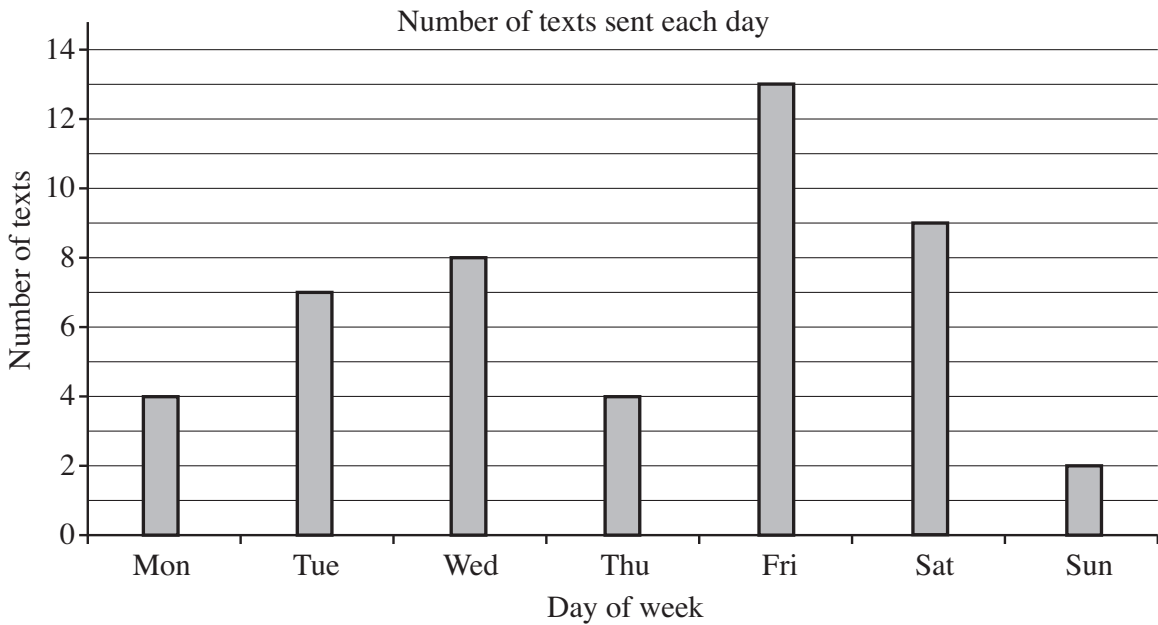
(ii) [1]

- (f) Tanya’s phone can send text messages up to 160 characters long. She has keyed in 85 characters.

How many more characters can she key in?

(f) [2]

- (g) Tanya keeps a record of how many texts she sends each day for a week.



- (i) How many texts did she send on Monday?

(g)(i) [1]

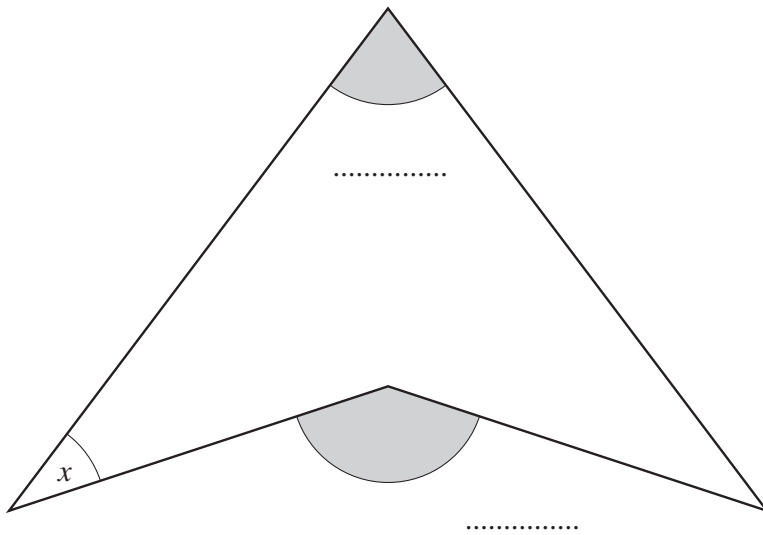
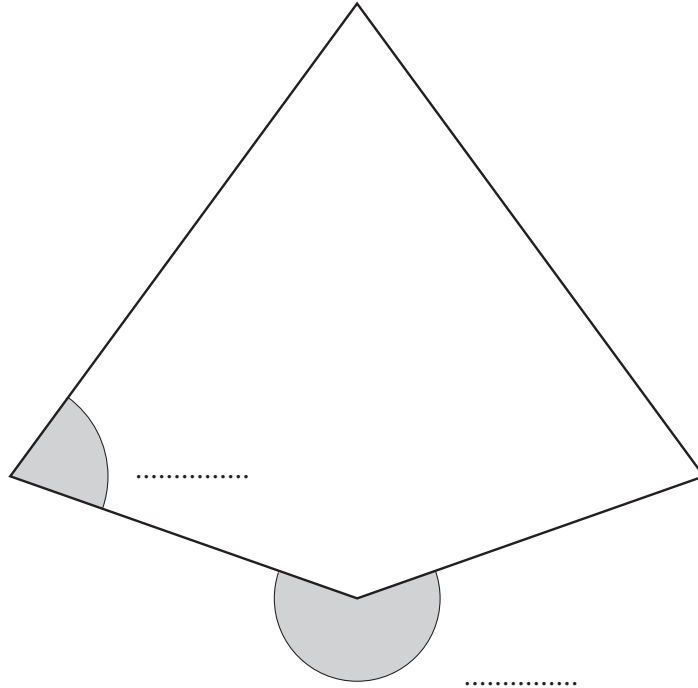
- (ii) On which day did she send the most texts?

(ii) [1]

2 The two tiles below can be used to make many different designs.

(a) Label the four shaded angles with the correct letter.

Write A for acute angle,
 O for obtuse angle,
 R for reflex angle.



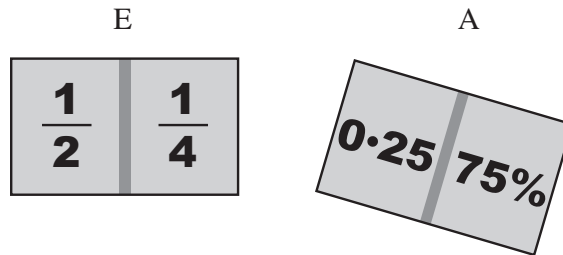
[2]

(b) Measure angle x .

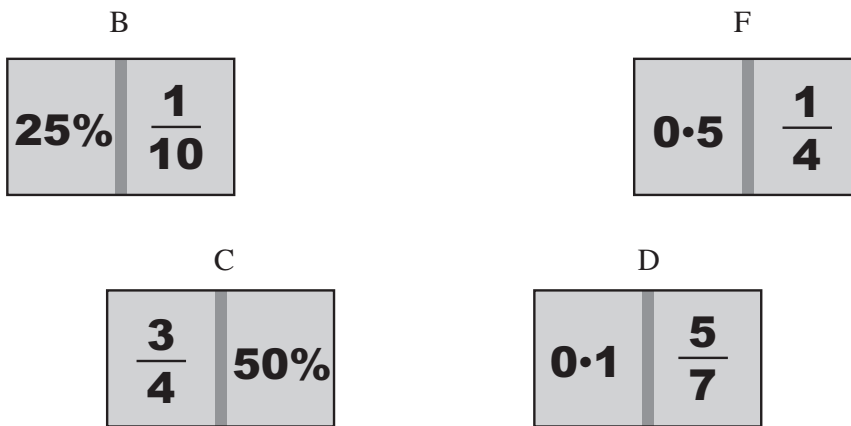
(b)° [1]

- 3 Amy has some dominoes showing fractions, decimals and percentages. The left-hand value of the next domino put down has to be equal to the right-hand value of the last one.

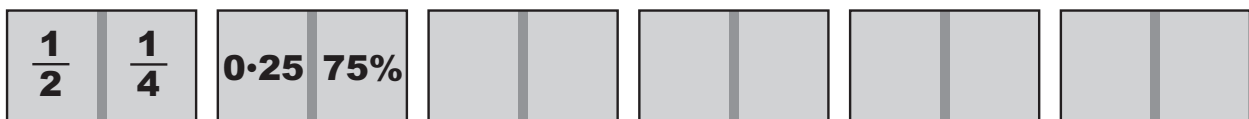
(a) Amy starts with domino E, and puts down domino A next.



Amy has to put down these four dominoes after domino A.



Show the order in which she should place them.
You don't have to draw the dominoes, just write down their letters.



E

A

.....

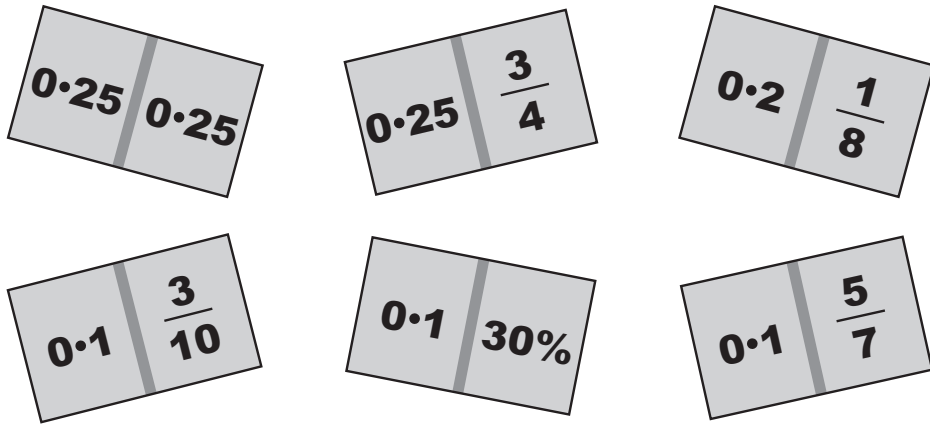
.....

.....

.....

[2]

- (b) Amy is playing another game of dominoes.
There are six dominoes left.



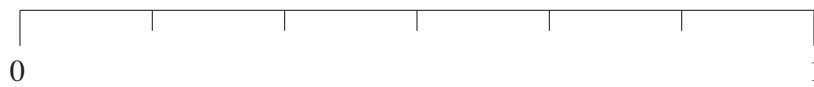
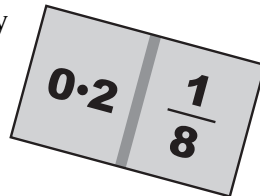
Andy turns them over so that Amy cannot see what they are.
Amy is about to pick one of the dominoes without looking.

- (i) She needs one with 0.25 on its left-hand side.
Andy, who knows what the dominoes are, says that is an evens chance.

Explain why he is wrong.

.....
..... [1]

- (ii) Draw an arrow on this line to show the probability that Amy picks this domino.
Label the arrow X.



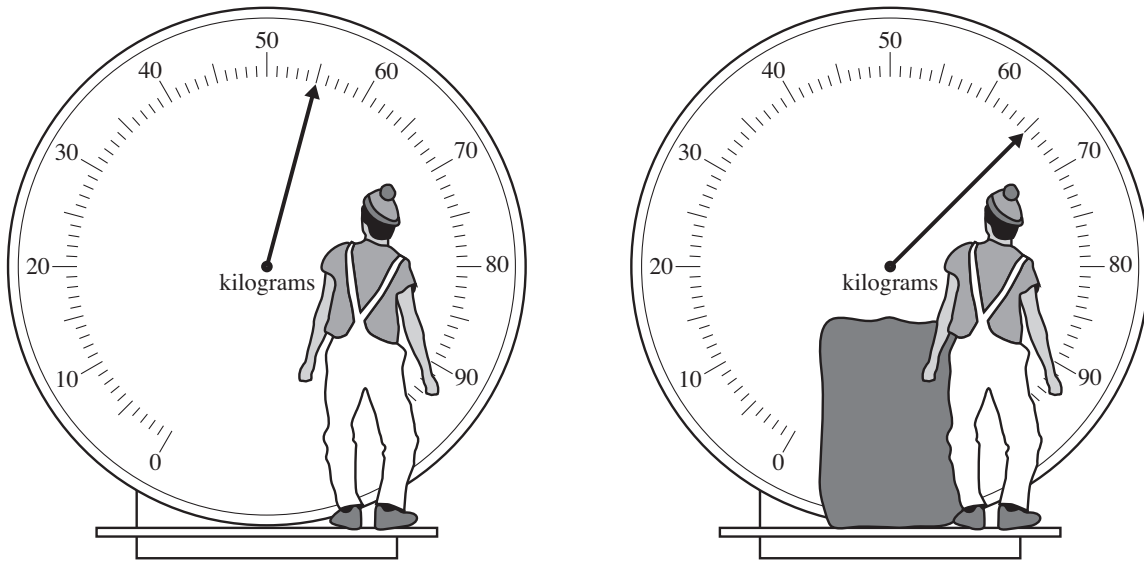
[1]

- (iii) Also draw an arrow on the line to show the probability that Amy picks a domino with 0.1 on it.
Label this arrow Y.

[1]

TURN OVER FOR QUESTION 4

- 4 Tom has a large bin liner full of tin cans to recycle.
 He weighs himself.
 Then he weighs himself **and** the bin liner full of tin cans.



TIN CANS – THE FACTS

- **1 kg of recycled tin cans saves 4.3 units of electricity.**
- **Each household in the UK uses about 15 tin cans a week.**
- **Tin cans weigh about 20 g each.**

How many units of electricity could Tom save by recycling all the tin cans in the bin liner?
 Ignore the weight of the bin liner.

..... units [4]

11
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