THIS IS A LEGACY SPECIFICATION

OCR
RECOGNISING ACHIEVEMENT

M4

Monday 16 January 2012 – Morning

GCSE MATHEMATICS C (GRADUATED ASSESSMENT)

B274A MODULE M4 – SECTION A

B21647011 2

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
- Geometrical instruments
- Tracing paper (optional)

Duration: 30 minutes

B274A

Candidate forename		Candidate surname	

Centre number						Candidate number				

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. 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.
- Show your 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).
- Do **not** write in the bar codes.

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 **8** pages. Any blank pages are indicated.

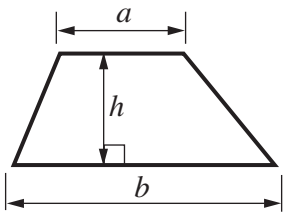
WARNING

No calculator can be used for Section A of this paper

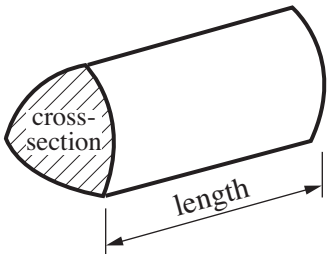
This paper has been pre modified for carrier language

Formulae Sheet

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



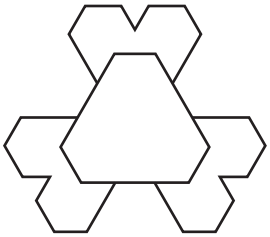
Volume of prism = (area of cross-section) × length

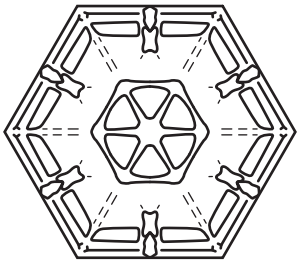


PLEASE DO NOT WRITE ON THIS PAGE

1 Snowflakes can form symmetrical shapes.
Here are drawings of some snowflakes.

Under each drawing write the number of lines of reflection
and the order of rotation symmetry.





..... lines of reflection

rotation symmetry

order .....

..... lines of reflection

rotation symmetry

order .....

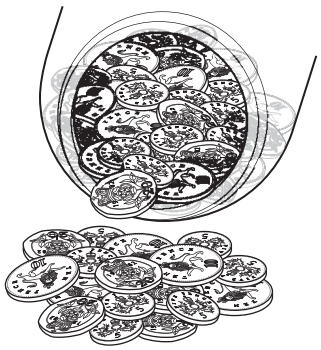
..... lines of reflection

rotation symmetry

order .....

[4]

2 Mia saves 5p, 10p and 20p coins in a jar.
When the jar is full she puts the money into her savings account.



(a) Here is Mia's tally of the coins saved so far.

5p coins

𝍸 𝍸 ///

10p coins

𝍸 𝍸 𝍸 𝍸 𝍸

20p coins

𝍸 𝍸 /

How much **more** money must she save to have £10?

(a) £ ..... **[4]**

(b) The following week, Mia has x twenty pence coins, y ten pence coins and z five pence coins in her jar.

(i) Write an expression for the total value, in pence, of x twenty pence coins.

(b)(i) ..... p **[1]**

(ii) The coins in the jar are worth T pence altogether.

Write a formula for T using x, y and z.

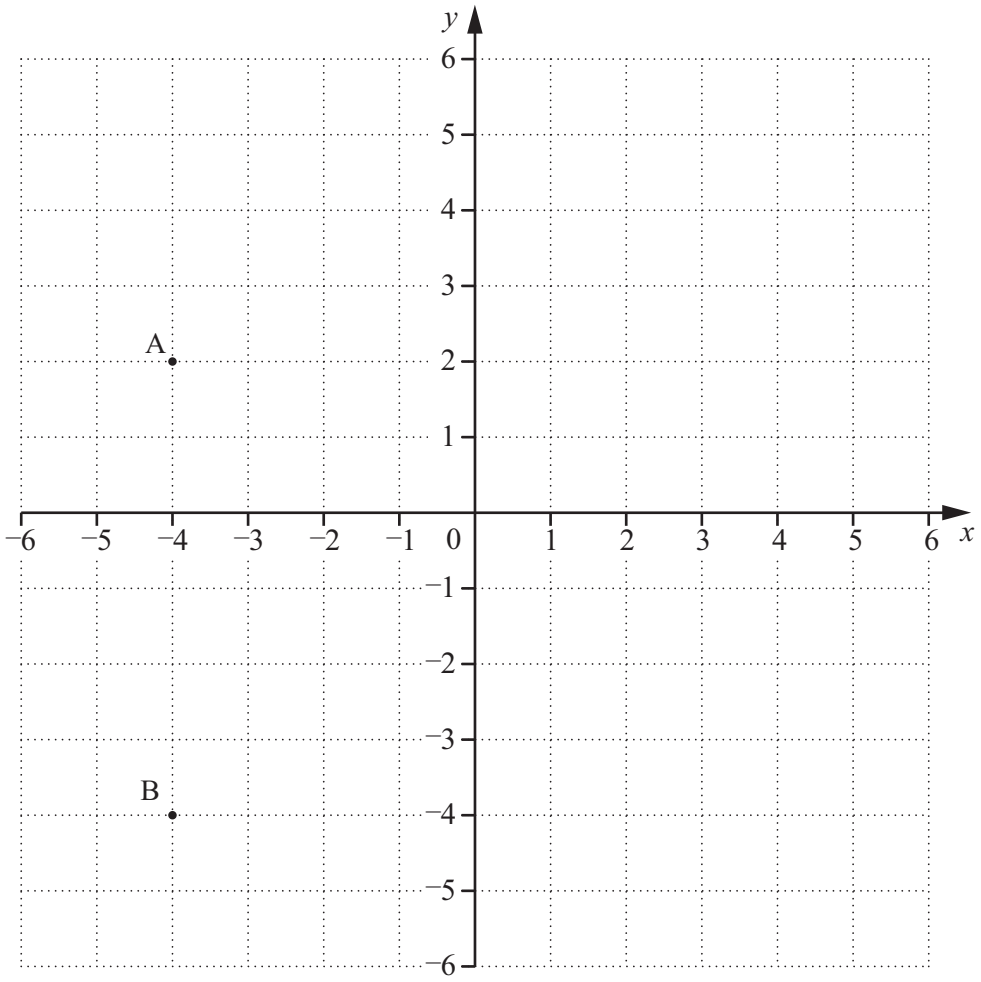
(ii) ..... **[2]**

3 A fifty pence coin weighs 8 g.
Fifty pence coins are made from cupro-nickel.
80 g of cupro-nickel is made from 60 g of copper and 20 g of nickel.

Find the weight of copper and the weight of nickel in a fifty pence coin.

..... g copper and ..... g nickel **[2]**

4 Here is a coordinate grid.



(a) Write down the coordinates of A and B.

(a) A (..... , ...)

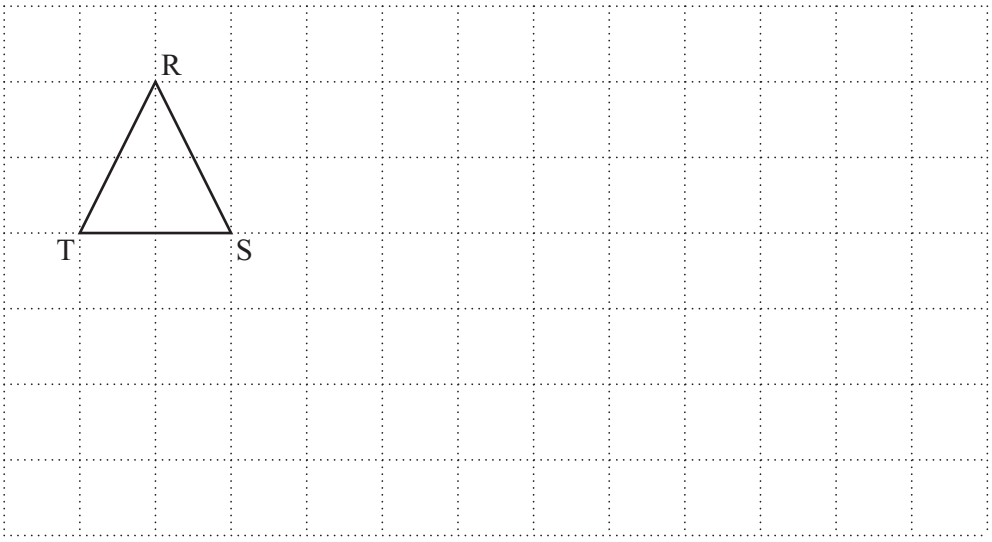
B (..... , ...) **[2]**

(b) (i) Mark and label the point C (5, $^{-}$1). **[1]**

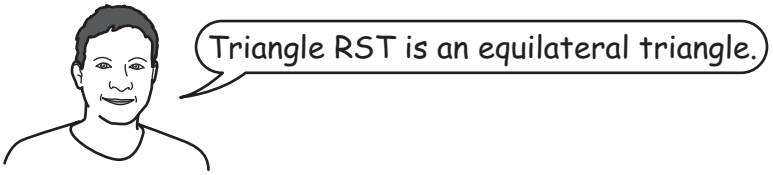
(ii) What type of triangle is ABC?

(b)(ii) ..... **[1]**

5 **(a)**



Justin says:



Is Justin correct?

Support your answer with some measurements.

..... because .....

..... **[2]**

(b) On the grid above draw an angle of 135°.
Use the lines on the grid to help you. **[1]**

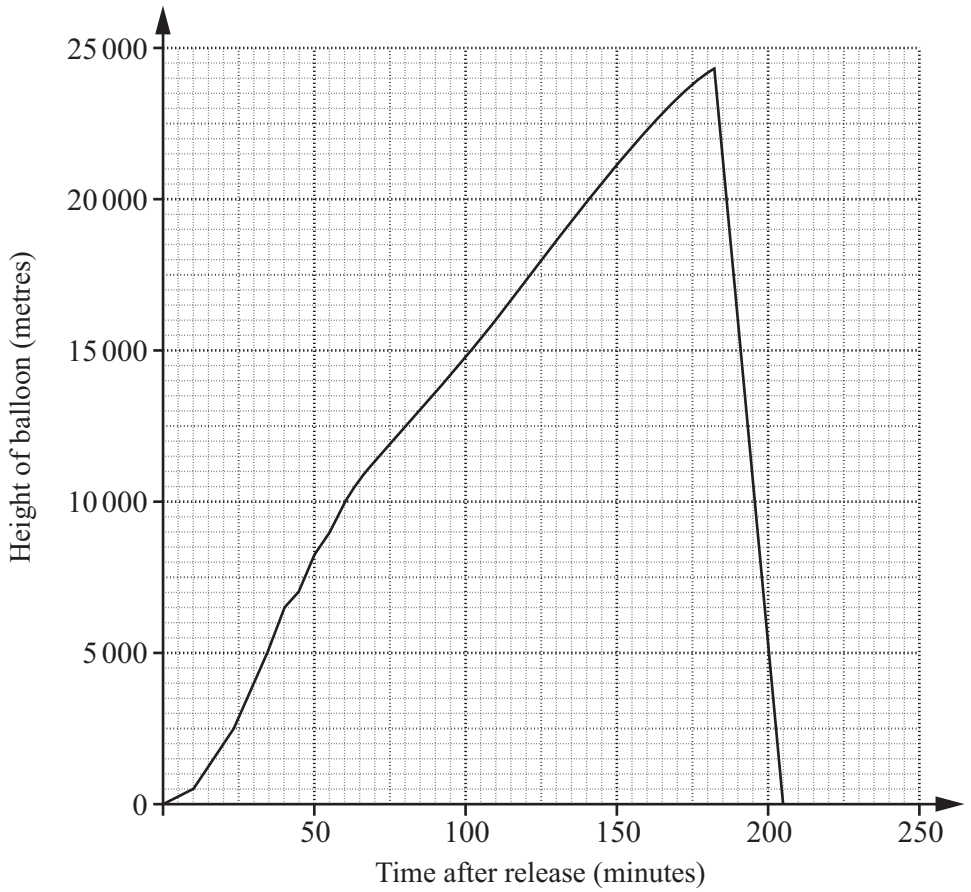
6 The 101 Tower in Taiwan is one of the tallest buildings in the world.
The lifts travel the 510 m to the top of the tower in 30 seconds.

How far does a lift travel in one second?

..... m **[2]**

TURN OVER FOR QUESTION 7

7 This graph shows how the height of a weather balloon changed with time after release.



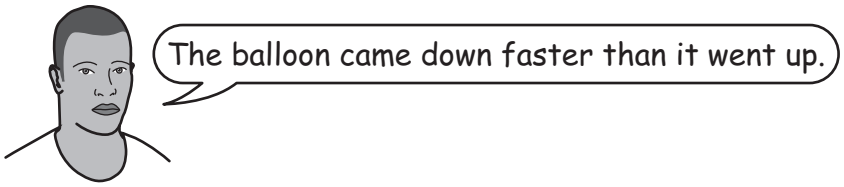
(a) What was the greatest height the balloon reached?

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

(b) About how long did the balloon take to reach its greatest height?

(b) ..... minutes **[1]**

(c) Jason says:



Is Jason correct?
Explain how you decided.

..... because .....

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