RECOGNISING ACHIEVEMENT

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

MATHEMATICS B (MEI)
PAPER 2 SECTION A
FOUNDATION TIER

1968/2314A

Specimen Paper 2003

Additional materials: Geometrical instruments
Tracing paper (optional).
Candidates answer on the question paper.
Calculators are **not** allowed.

TIME 1 hour

Candidate Name	Centre Number	Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Show all your working. Marks may be given for working which shows that you know how to solve the problem, even if you get the answer wrong.

YOU ARE NOT ALLOWED TO USE A CALCULATOR IN THIS PAPER.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use Only	
Section A	
Section B	
TOTAL	

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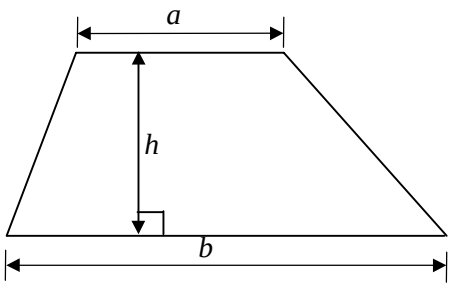
FORMULAE SHEET: FOUNDATION TIER

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



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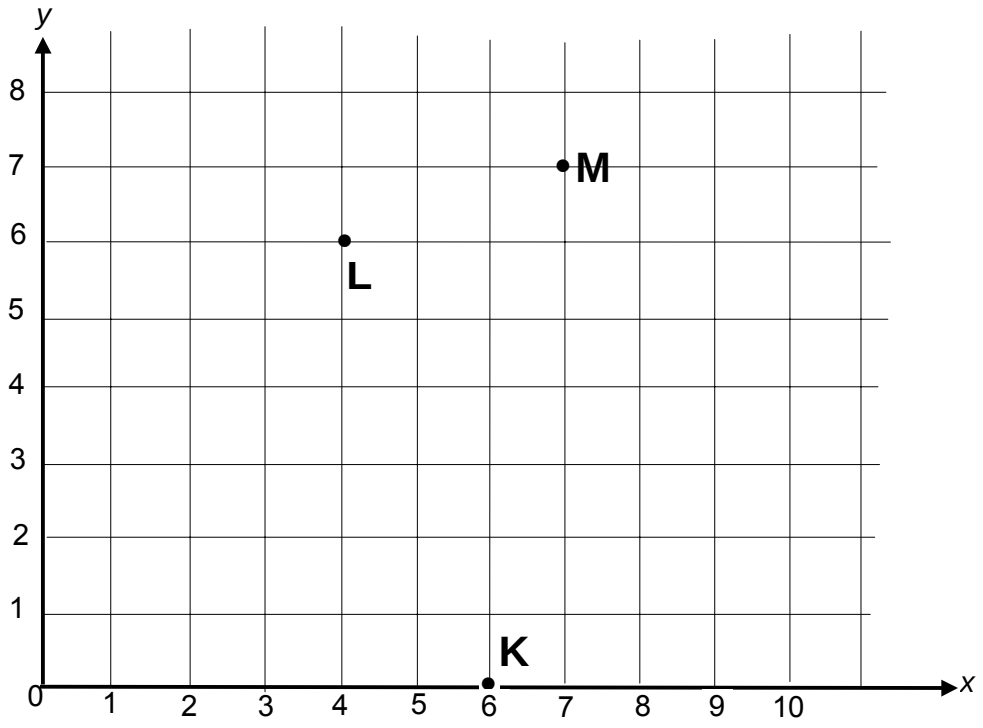
1 K, L and M are three points on a 1cm grid.



(a) Write down the coordinates of the point L.

Answer *(a)* (_____ , _____) [1]

(b) **(i)** KLMN is a rectangle.
Mark and label the point N.

[1]

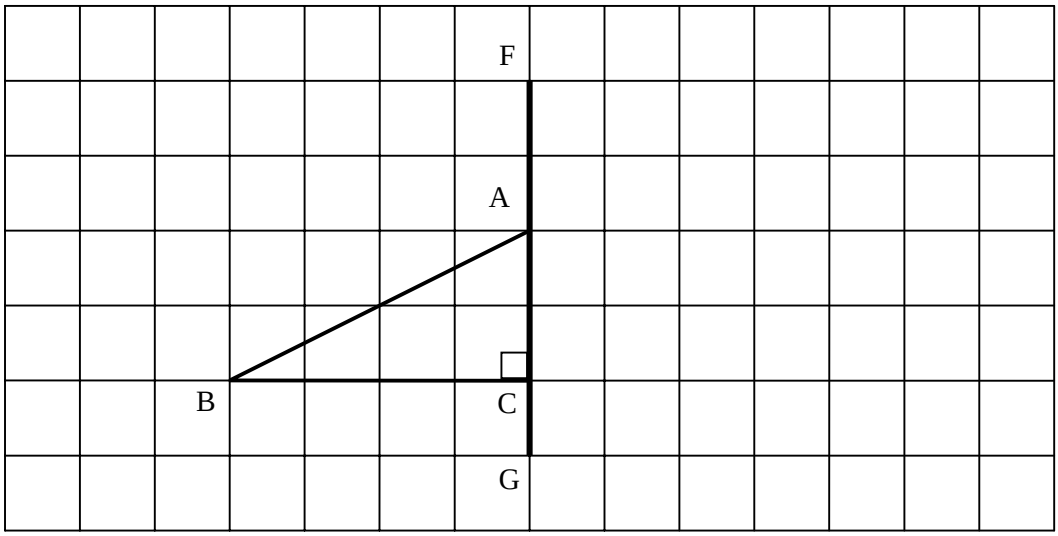
(ii) Write down the coordinates of N.

Answer *(b)(ii)* (_____ , _____) [1]

(c) Draw a line through the point L, parallel to the *x*-axis.

[1]

2 Draw the reflection of triangle ABC in the line FG.
Label the image of B with the letter D.



[2]

3 Emma is working with these numbers.

4 8 12 16 20 24

(a) **(i)** Which two numbers when added give her the largest total?

Answer (a)(i) _____ [1]

(ii) What is this total?

Answer (a)(ii) _____ [1]

(b) Emma is going to divide two of these numbers.
Work out the largest answer she can get.

Answer (b) _____ [2]

4 **(a)** These numbers are the start of a sequence.

5 13

The "sequence rule" is "add 8 to the last term".
Write down the next number in the sequence.

Answer (a) _____ [1]

(b) These patterns are the start of a sequence.

Draw the next pattern in the sequence

Answer (b) _____ [1]

(c) Here is a different sequence.

1 2 4 7 11 16

(i) Write down the next number in this sequence.

Answer (c)(i) _____ [1]

(ii) Write down a rule for this sequence.

Answer (ii) _____ [1]

5 Work out

(a) $5^2 + 2^3$,

Answer *(a)* _____ [2]

(b) $0{\cdot}4 \times 0{\cdot}2$.

Answer *(b)* _____ [1]

6 Sue is a maths teacher.
Last term she taught 360 lessons.
40% of the lessons were year 9 lessons.
25% of the lessons were year 10 lessons.
The rest were year 11 lessons.
How many year 11 lessons did Sue teach last term?

Answer _____ [5]

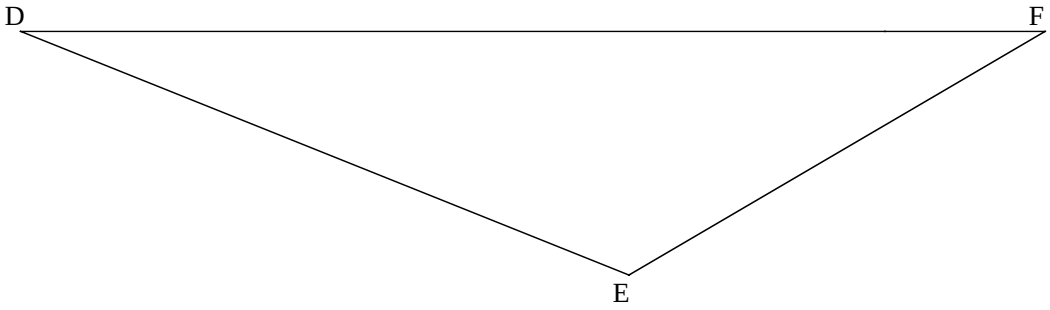
7 **(a)** Estimate, to the nearest whole number, the value of $\sqrt{63}$.

Answer *(a)* _____ [1]

(b) Write down a calculation you could do to check that $\sqrt{324} = 18$.
You do **not** have to do the calculation.

Answer *(b)* _____ [1]

8 **(a)** This triangle has been drawn accurately.



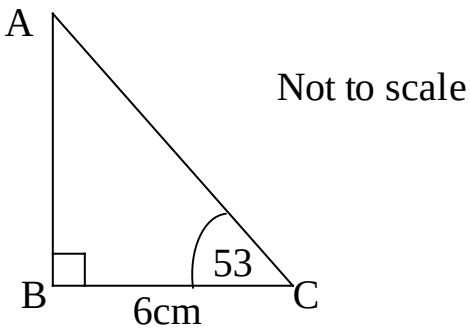
(i) Measure angle E.

Answer *(a)(i)* _____ ° [1]

(ii) What type of angle is E?

Answer *(ii)* _____ [1]

(b) This triangle has not been drawn to scale.



(i) Calculate the size of angle A.

Answer *(b)(i)* _____ ° [1]

(ii) Draw the triangle ABC accurately below.
The side BC has been drawn for you.

B C

[2]

9 **(a)** Simplify this expression.

$$6a - 5b + 2a + b$$

Answer *(a)* _____ [2]

(b) Solve this equation.

$$8x - 5 = 5x + 13$$

Answer *(b)* _____ [3]

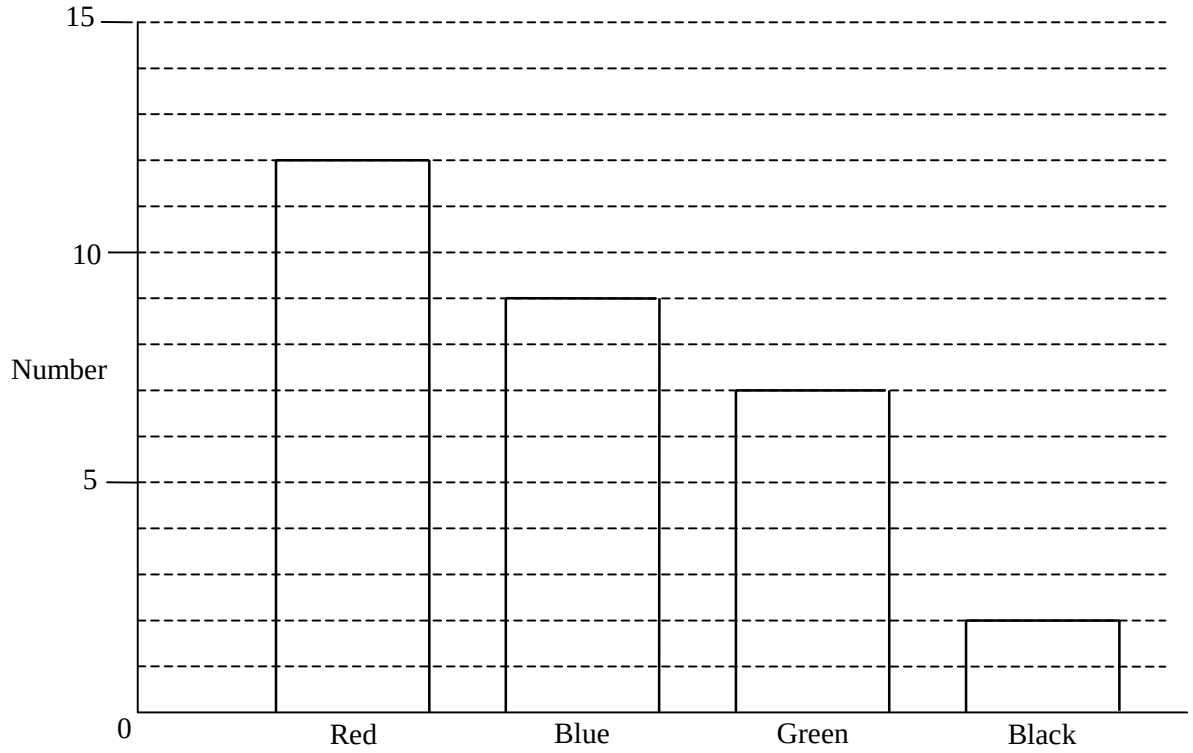
(c) Multiply out this expression.

$$7(x - 3)$$

Answer *(c)* _____ [1]

10 A pack of 30 cards is used in a game.
Each card is coloured.

The number of cards of each colour is shown on the grid.



(a) A card is chosen at random.
What is the probability that it is red or green?

Answer *(a)* _____ [1]

Each card has a shape on it.
The numbers of each shape on the 30 cards are given.

Circle	Triangle	Square	Diamond
12	11	6	1

(b) A card is chosen at random.
What is the probability that it shows a circle or a triangle?

Answer *(b)* _____ [1]

(c) Why is it not possible to find the probability that a card chosen at random is red and shows a circle.

Answer (c) _____

_____

_____ [2]

11 **(a)** Erin and Steven decide to have a "take away" meal.
They have forgotten whose turn it is to pay.
Briefly describe a method they could use to decide who should pay for the meal this time.
Your method must give each of them the same chance to pay.

Answer (a) _____

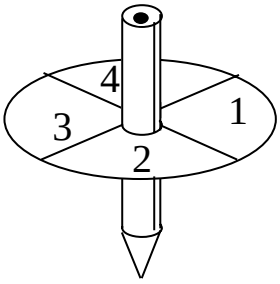
_____ [1]

(b) Harry has organised a party for Senior Citizens.
There are 100 guests.
Harry has a box of food to be won by one of the guests.
Briefly describe a fair method he could use to find a winner.

Answer (b) _____

_____ [1]

(c) Nathan has a fair spinner numbered 1, 2, 3, 4 and a fair coin which shows heads or tails.



He spins the spinner and tosses the coin.

(i) Complete the table to show all the possible outcomes.

Spinner	Coin
1	Head

[2]

(ii) Write down the probability that Nathan gets a 3 and a tail.

Answer (ii) _____ [1]

12 **(a)** **Estimate** the answer to this calculation.
You must show all the approximations you use.

$$\frac{39.8 \times 4.9}{20.3}$$

Answer *(a)* _____ [2]

(b) The calculation below is correct.

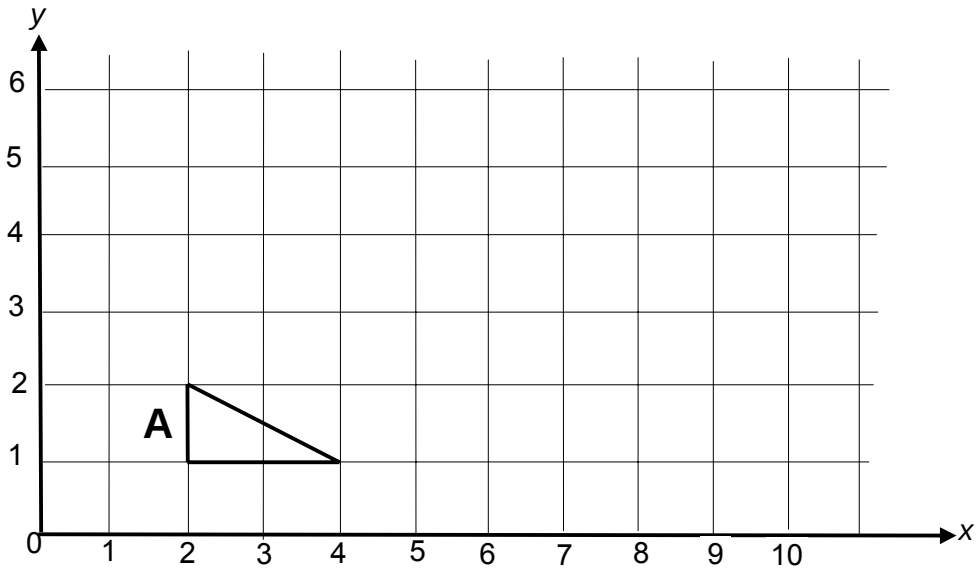
$$684 \times 27 = 18\,468$$

Use this to calculate

18 468 ÷ 270

Answer *(b)* _____ [1]

13



Enlarge shape A with the centre (0,0) and scale factor 2.
Label the image D.

[3]

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MARK SCHEME

Specimen Paper 2003

SECTION A

1	**(a)**		(4,6)	B1	
	(b)	**(i)**	Correct point	B1	
		(ii)	(9,1)	B1	
	(c)		Horizontal line through L	B1	
2			Correct triangle	B2	(B1 for one correct line drawn)
3	**(a)**	**(i)**	20, 24	B1	
		(ii)	44	B1	
	(b)		6	B2	(B1 for $24 \div 4$)
4	**(a)**	**(i)**	21	B1	
		(ii)	seven dots forming V	B1	
	(b)	**(i)**	22	B1	
		(ii)	add on one more each time (or equivalent)	B1	
5	**(a)**		33	B2	(B1 for 25 or 8 seen)
	(b)		0.08	B1	
6			(40/100) x 360	M1	
			144	A1	
			90	B1	
			360 – (144 + 90)	M1	
			126	A1	
7	**(a)**		8	B1	
	(b)		18 x 18	B1	
8	**(a)**	**(i)**	$128 \pm 2°$	B1	
		(ii)	obtuse	B1	
	(b)	**(i)**	37°	B1	
		(ii)	53° correct $\pm 2^o$	B1	
			90° correct $\pm 2^o$	B1	

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9	**(a)**		$8a$	B1	
			$-4b$	B1	
	(b)		$8x - 5x = 13 + 5$	M1	
			$3x = 18$	M1	
			$x = 6$	A1	
	(c)		$7x - 21$	B1	
10	**(a)**		19/30	B1	
	(b)		23/30	B1	
	(c)		May not be independent (or equivalent)	B2	(B1 for partially correct explanation)
11	**(a)**		process – 2 outcomes	B1	
	(b)		sensible random number process – 100 outcomes	B1	
	(c)	**(i)**	2H, 3H, 4H, IT, 2T, 3T, 4T	B2	(B1 for five correct)
		(ii)	1/8	B1	
12	**(a)**		40, 5, 20	M1	
			10	A1	
	(b)		68.4	B1	
13			correct figure	B3	(B1 for one side correct, B2 for one vertex correct)