MATHEMATICS B (MEI)
PAPER 2 SECTION B
FOUNDATION TIER

1968/2314B

Specimen Paper 2003

Additional materials: Electronic calculator
Geometrical instruments
Tracing paper (optional).

Candidates answer on the question paper.

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 expected to use an electronic calculator for this paper.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.
- You are expected to use an electronic calculator for this paper.
- Unless otherwise instructed in the question, take π to be 3.142 or use the π button on your calculator.
- Section B begins with question 14.

For Examiner's Use Only	
Section B	
TOTAL	

FORMULAE SHEET: FOUNDATION TIER

Area of trapezium $= \frac{1}{2}(a+b)h$
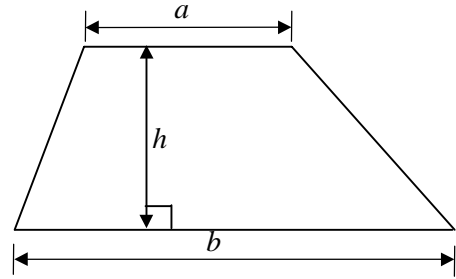
14 The table below shows equivalent percentages, decimals and fractions.
Complete the table.

Percentage	Decimal	Fraction
75%	0.75	$\frac{3}{4}$
20%		
8%		$\frac{2}{25}$

[3]

15 Jacky goes swimming.
The swimming pool is $33\frac{1}{3}$ metres long.

(a) One week Jacky goes swimming on Monday, Thursday and Friday.
Each day she swims 30 lengths of the pool.
Calculate the distance that she swims in that week.

Answer *(a)* _____ m [2]

(b) On average, Jacky can swim one length in 70 seconds.
Calculate how many minutes it takes her to swim 30 lengths.

Answer *(b)* _____ minutes [2]

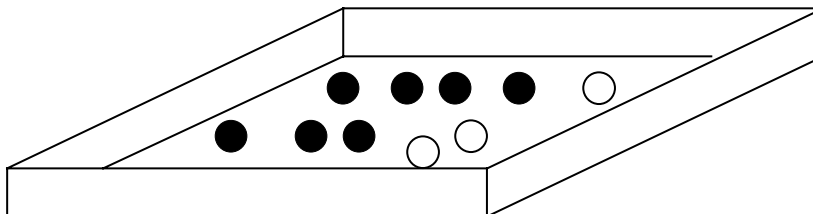**16** **(a)** The diagram shows five probabilities marked on a probability line.
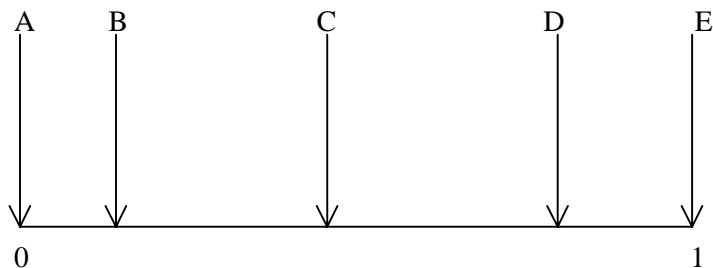
Match each of these terms with the correct letter from the diagram.

Certain   **Even**   **Impossible**   **Likely**   **Unlikely**

‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾   [2]

(b) Jade picks a ball at random from this box.

Which of the below describes the probability that she picks a black ball.

Certain   **Even**   **Impossible**   **Likely**   **Unlikely**

Answer   *(b)*   _____   [1]

17 The instructions on the bottle for a fruit drink are given below.

```
Passion Fruit Refresher
3 parts Passion Fruit juice
5 parts soda
```

Li-an wants to make 2 litres of Passion Fruit Refresher.

(a) Work out the amount of Passion Fruit juice she needs.

Answer *(a)* _____ litres [2]

(b) Work out the amount of soda she needs.
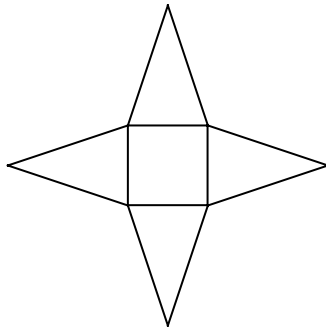
Answer *(b)* _____ litres [1]

18 **(a)** What is the name given to this shape?
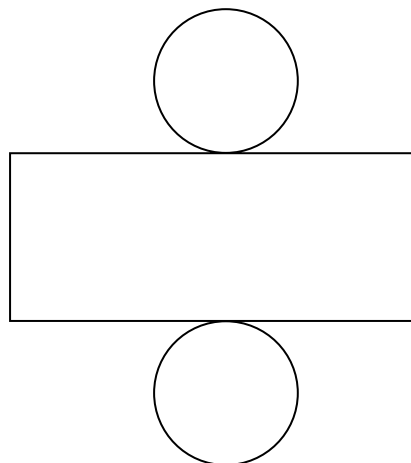
Answer *(a)* _____ [1]

(b) Look at the nets shown below.
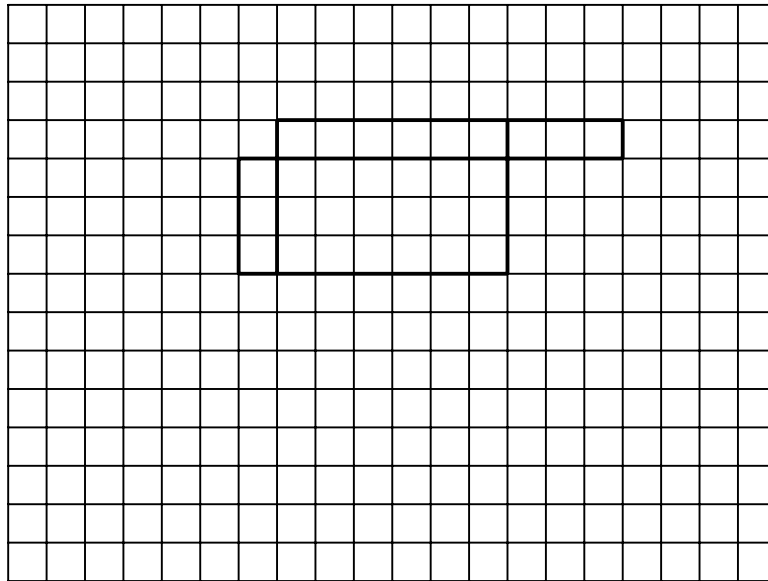Write down the name of the shape that each net makes when it is folded.

(i)

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

(ii)

Answer *(ii)* _____ [1]

(c) The diagram below is part of the net of a cuboid.
Complete the net.

[2]

19   Alex makes Christmas decorations.

  (a) She uses pieces of ribbon 0·15m long.
      A roll of ribbon is 20m long.
      Calculate the largest number of pieces of ribbon that Alex can cut from one roll.

Answer   (a) _____ [2]

  (b) What length of ribbon is left over at the end of a roll?

Answer   (b) _____ m   [1]

  (c) Alex sells the decorations she makes.
      Standard packs cost £2 each.
      Large packs cost £3 each.

    (i) Esme buys f standard packs.
        Write down the cost of Esme's packs.

Answer   (c)(i) £_____ [1]

    (ii) Tom buys g large packs.
        Write down the total cost that Tom and Esme have to pay.

Answer   (ii) £_____ [1]

  (d) Alex also sells cards.
      Each box of cards costs £4.
      Esme buys h boxes of cards.
      Tom buys twice as many boxes as Esme.
      What is the total cost of the boxes of cards that they buy?

Answer   (d) £_____ [2]

20 In a raffle 520 tickets are sold.
They are numbered from 1 to 520.

(a) The price of a ticket is 25 pence.
Work out the total amount collected.
Give your answer in pounds.

Answer   *(a)*   £_____   [2]

(b) The winning number is chosen at random.
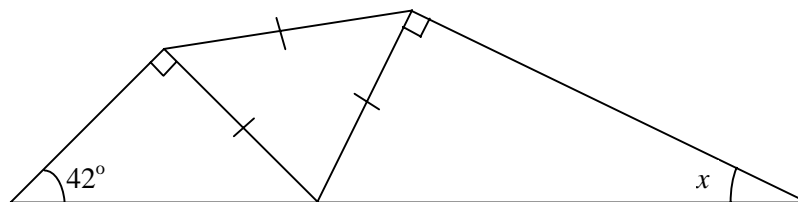
Work out the probability that it is

(i) 99,

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

(ii) greater than 240.

Answer   *(ii)* _____   [2]

21 Look at this diagram.

Work out the value of *x*.

Answer   *x* = _____ °   [4]

22 **(a)** Oliver knows a rule to change distances in miles into kilometres.

Multiply by 8

Then divide by 5

Use Oliver's rule to complete the table.

Miles	30	50	62.5
Kilometres		80	

[2]

(b) Hannah knows that Oliver's rule can be made into a "one step" rule.

(i) She calculates the value of $\dfrac{8}{5}$ as a decimal.

Work this out.

Answer   (b)(i) _____ [1]

Hannah uses her number in this rule.

Multiply the miles by my number
to get kilometres.

(ii) Write Hannah's rule in symbols.
Use *m* for the distance in miles.
Use *k* for the distance in kilometres.

Answer   (ii) _____ [1]

23 The diagram below shows the island of Great Minja.
   M marks the centre of the village.
   B marks the top of a beach ladder.
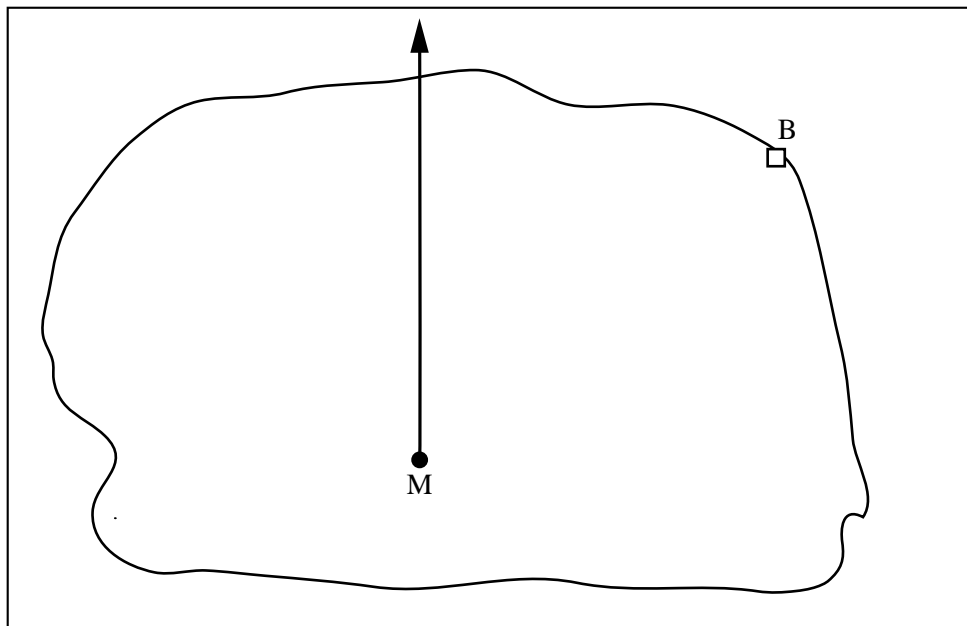
(a) Measure the bearing of B from M.

Answer (a) _____ [1]

(b) The scale of the diagram is 2 cm represents 1 km.
   Vernon's Snout is 3 km from M on a bearing of 100°.
   Mark the position of Vernon's Snout, label it V.

Answer (b) _____ [2]

24 Calculate

(a) $\dfrac{1}{0.72 + 0.88}$,

Answer (a) _____ [1]

(b) $(4.5)^2 + (3.5)^3$.

Answer (b) _____ [1]

25 Look at the diagram below.

53°

28°

Not to scale

a

b
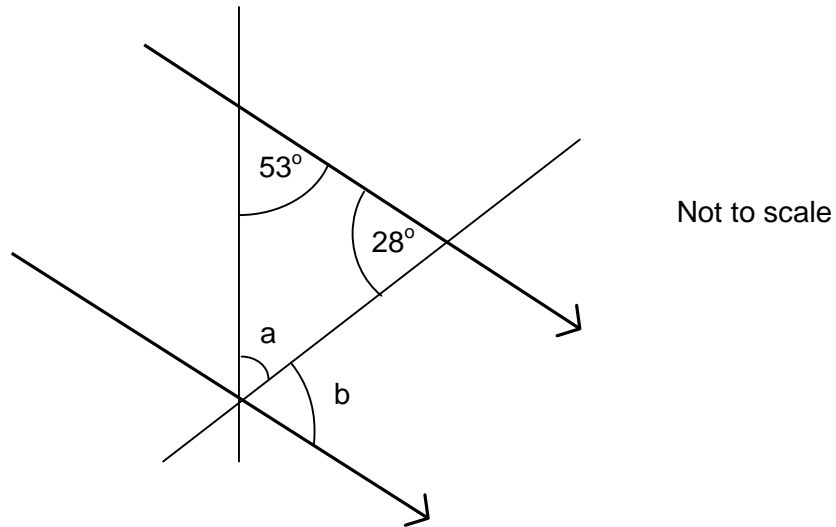
(a) (i) Find the size of angle a.

Answer (a)(i) _____ ° [1]

(ii) Give a reason for your answer.

Answer (ii) _____ [1]

(b) (i) Find the size of angle b.

Answer (b)(i) _____ ° [1]

(ii) Give a reason for your answer.

Answer (ii) _____ [1]

26   On the axes below draw the line $y = 8 - 2x$.

[3]

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

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MARK SCHEME

Specimen Paper 2003

SECTION B

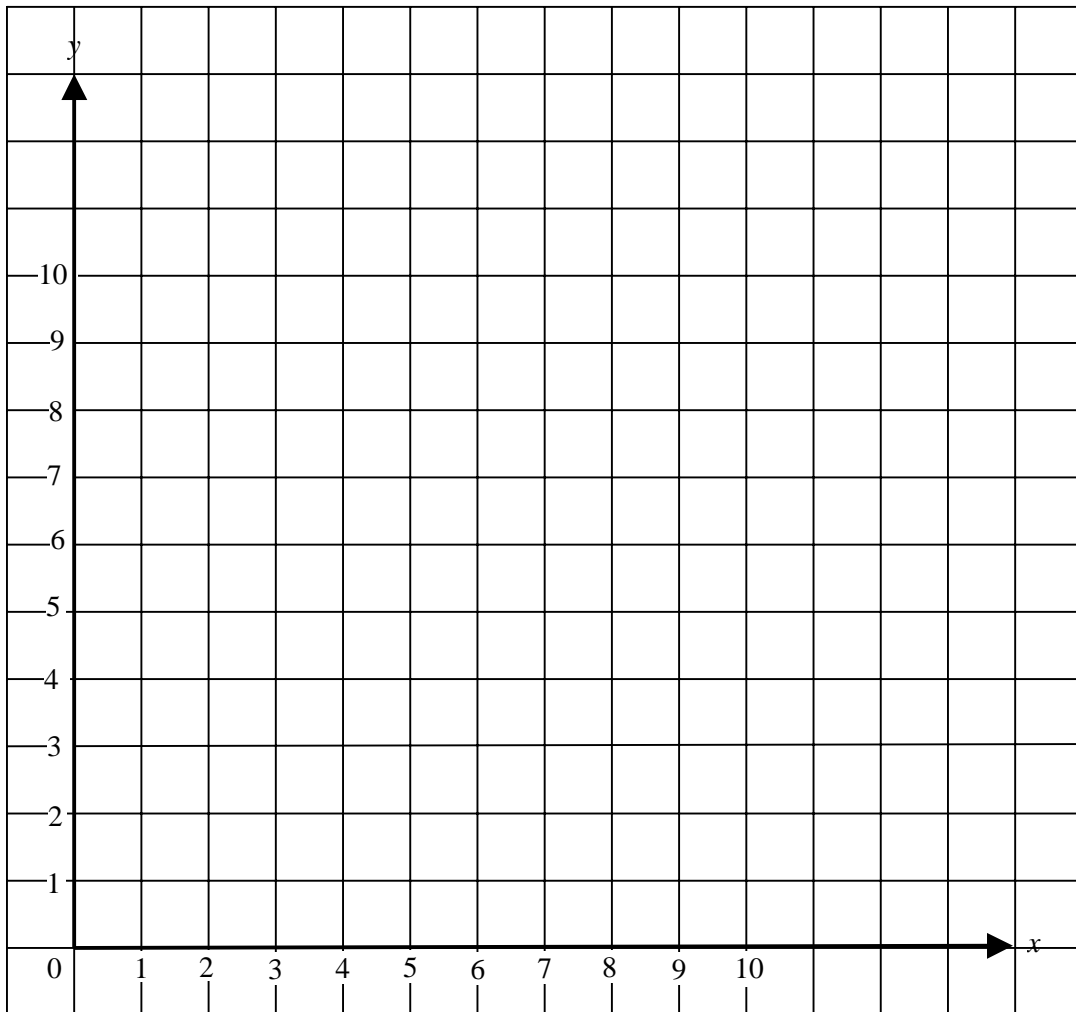| 14			0.2(0)	B1	
			20/100 (or equivalent)	B1	
			0.08	B1	
15	(a)		3000	B2	(B1 for $33^{1}/_{3} \times 30 \times 3$)
	(b)		35	B2	(B1 for 2100)
16	(a)		E, C, A, D, B	B2	(B1 for three correct)
	(b)		likely	B1	
17	(a)		0.75 or equivalent (allow ml)	B2	(B1 for 3/8 seen)
	(b)		1.25 or equivalent (allow ml)	B1	
18	(a)		parallelogram	B1	
	(b)	(i)	pyramid	B1	
		(ii)	cylinder	B1	
	(c)		2 correct faces added	B2	(B1 for one correct face only)
19	(a)		133	B2	M1 for 20 ÷ 0.15
	(b)		0.05	B1	
	(c)	(i)	$2f$	B1	
		(ii)	$2f + 3g$	B1	
	(d)		$12h$	B2	(B1 for $3h$)
20	(a)		520 x 25 / 100	M1	
			130	A1	
	(b)	(i)	1/520	B1	
		(ii)	7/13 or equivalent	B2	(B1 for sight of 280 (or 281))
21			60° in equilateral triangle	B1	(allow f/t)
			180 – (90 + 42)	M1	
			180 – (48 + 60)	M1	
			18	A1	
22	(a)		48, 100	B1, B1	
	(b)	(i)	1.6	B1	
		(ii)	$k = 1.6\,m$	B1	

23	(a)		(0) 49 ± 2°		B1	(allow f/t)
	(b)		correct angle		B1	
			correct distance		B1	
24	(a)		0.625		B1	
	(b)		63.125		B1	
25	(a)	(i)	99°		B1	
		(ii)	angle sum of triangle = 180°		B1	
	(b)	(i)	28°		B1	
		(ii)	alternate angle		B1	
26			one point plotted correctly		B1	
			second point plotted correctly		B1	
			joined by a ruled line		B1	

Qn	NC Ref	Topic/Context	Nu	Man Alg	Non Mal Alg	SS	HD	G	F	E	D	M/S	PS	C	R	F/I	I/H
		Paper: 2314				Year: 2003 Specimen		Target grades					UAM marks			Notes	
1	2.5, 3.3	Graphs of linear functions, Coordinates			2	2		4									
2	3.3	Properties of transformations				2		2									
3	2.3	Number operations and the relationship between them	4					4									
4	2.6	Sequences			4			2		2							
5	2.2 2.3	Powers and roots, Mental methods	2							3							
6	2.3	Written methods	5							5		5				5	
7	2.3	Mental methods	3						1	1			2				
8	3.4, 3.2	Constructions, Properties of triangles and other rectilinear shapes				5			4	1							
9	2.5	Use of symbols, Linear equations		6						2	4						
10	4.4	Processing and representing data					4			4					2	4	
11	4.2, 4.4	Specifying the problem and planning Processing and representing data					5	2	3								
12	2.3	Mental methods	3								3					3	
13	3.3	Properties of transformations				3					3					3	
14	2.3	Number operations and the relationship between them	3					3									
15	2.3	Written methods	4					4									
16	4.4	Processing and representing data					3	1	2								
17	2.3	Written methods	3								3						
18	3.2	Properties of triangles and other rectilinear shapes, 3-D shapes				5		3	2					3			
19	2.4, 2.5	Solving numerical problems, Formulae	3	4				3	2	2							
20	2.3, 4.4	Calculator methods, Processing and representing data	2				3	2	3								
21	3.2	Properties of triangles and other rectilinear shapes				4				4		4	3				
22	2.3, 2.5	Number operations and the relationship between them, Formulae	1	3				1	2	1							
23	3.4	Measures				3					3					3	
24	2.3	Written methods	2								2						
25	3.2	Angles				4					4				2	4	
26	2.6	Graphs of linear functions			3						3						
		Total	35	13	9	28	15	31	19	25	25	9	5	3	4	22	