



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

NOVEMBER 2018

MATHEMATICAL LITERACY P1

MARKS: 75

TIME: 1½ hours



This question paper consists of 9 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions.
2. Answer ALL the questions.
3. Number the questions correctly according to the numbering system used in this question paper.
4. Diagrams are NOT necessarily drawn to scale.
5. Round off ALL the final answers appropriately according to the context used, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Start EACH question on a NEW page.
8. Show ALL calculations clearly.
9. Write neatly and legibly.



QUESTION 1

1.1 Decoform furniture factory shop is having a birthday sale. Mr Dlamini wants to buy a TV plasma unit to the value of R499,00 using the cash option. All prices are value added tax (VAT) inclusive.

Study the payment options in TABLE 1 below and answer the questions that follow.

TABLE 1: PAYMENT OPTIONS

CASH OPTION	LAY-BYE OPTION
Television plasma unit (120 cm)	Television plasma unit (120 cm)
Price: R499,00	Price: R499,00
Discount: 10%	Deposit: 15%
VAT inclusive	6 equal monthly instalments
VAT 15%	NB.: No discount on lay-bye items

- 1.1.1 Write down the cash price. (2)
- 1.1.2 Calculate the total cost price for the TV plasma unit (cash option). (2)
- 1.1.3 Determine the original price of the TV plasma unit before VAT was added. Give your final answer to the nearest whole number. (3)
- 1.1.4 Calculate the deposit amount for the lay-bye option. (2)
- 1.1.5 Write down the length size of the television plasma unit in metres. (2)
- 1.2 Explain the term *discrete data*. (2)
- 1.3 The numeric scale for a kitchen plan is given as 1 : 100. Explain what the scale 1 : 100 means. (2)

[15]



QUESTION 2

- 2.1 Study TABLE 2 below regarding the increase in the petrol price and answer the questions that follow.

TABLE 2

UNLEADED PETROL ON THE COAST PER LITRE	PRICE
2018, January 3	R13,93
2018, February 7	R13,63
2018, March 7	R13,27
2018, April 4	R13,89
2018, May 2	R14,38
2018, June 6	R15,20
2018, July 4	R15,43

[Source: <http://www.sapia.org.za>]

- 2.1.1 Write down the price of petrol on 7 March 2018. (2)
- 2.1.2 Calculate the percentage change in the price of petrol between 7 March and 4 April 2018. Use the formula below: (3)

$$\% \text{ change} = \frac{\text{New price} - \text{Old Price}}{\text{Old Price}} \times 100\%$$

- 2.2 Lerato sees that Vodolite has a new price plan for prepaid phones only, available until 30 November 2018. The rates applicable to this price plan are set out in TABLE 3 out below. She likes the plan and decides to sign up.

TABLE 3

USAGE	COST
Local call (any network any time)	90 cents per minute (bill per second)
SMS	80 cents per SMS all day
MMS (300 KB or less)	R1,20 per MMS
International SMS	R1,95 per SMS all day

Use TABLE 3 above to answer the questions.

- 2.2.1 During the month of November, Lerato sends one SMS per day to relatives. Calculate how much this activity costs her in rands. (2)
- 2.2.2 Lerato spends 2 hours 30 minutes talking to her relatives during the month. Calculate how much this costs her. (Assume that there are 30 days in the month.) (4)
- 2.2.3 Calculate Lerato's daily cellphone cost for calls in rands. (2)

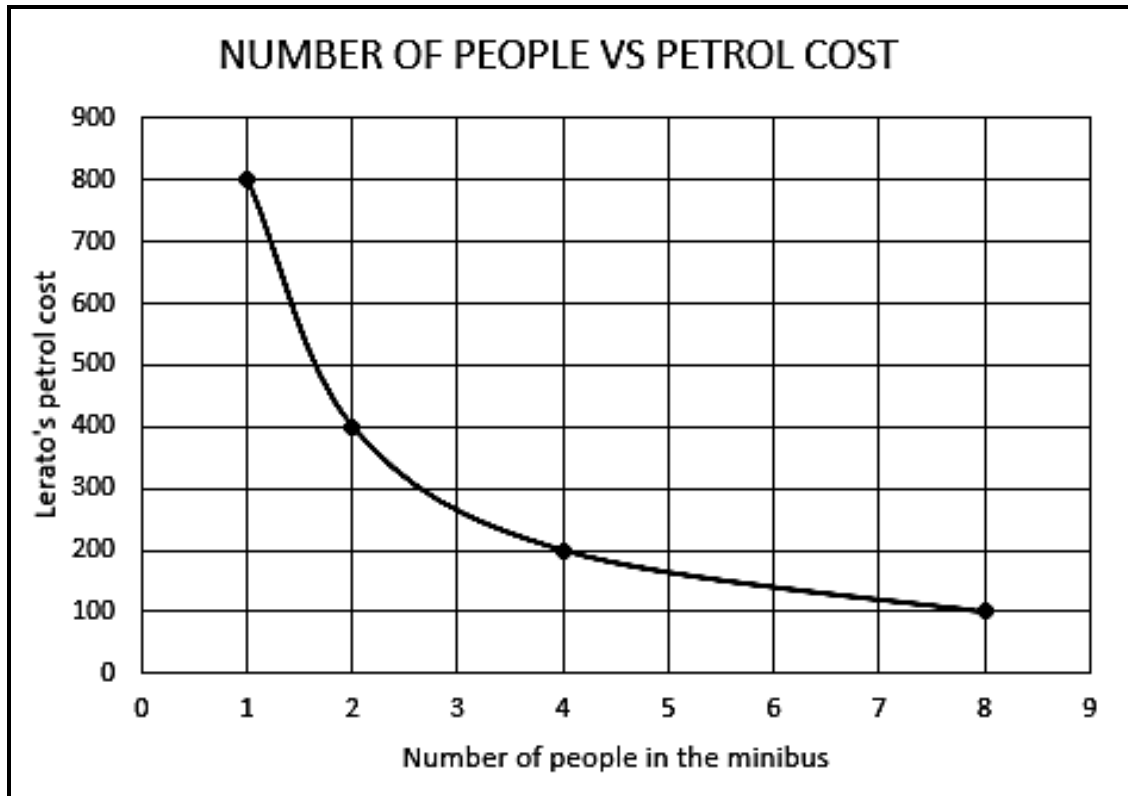
2.3 Mandy and Joshua work together on Market Day at their school. They split their profit according to the ratio 2 : 3 respectively. They make a profit of R500.

Calculate the amount Mandy will receive.

(2)

2.4 Lerato is planning to go on holiday in a minibus. She estimates that petrol will cost her R800 to get to her destination.

The graph below outlines the relationship between the amount of money that Lerato will have to pay for petrol, and the number of people travelling in the minibus.



Use the graph above to answer the questions.

2.4.1 Determine how much it will cost Lerato if 4 people travel with her in the minibus.

(2)

2.4.2 Determine the number of people travelling with her in the minibus, if Lerato uses R400 for her petrol.

(2)

2.4.3 Calculate how much the petrol cost will be if 9 people travel in the minibus.

(2)

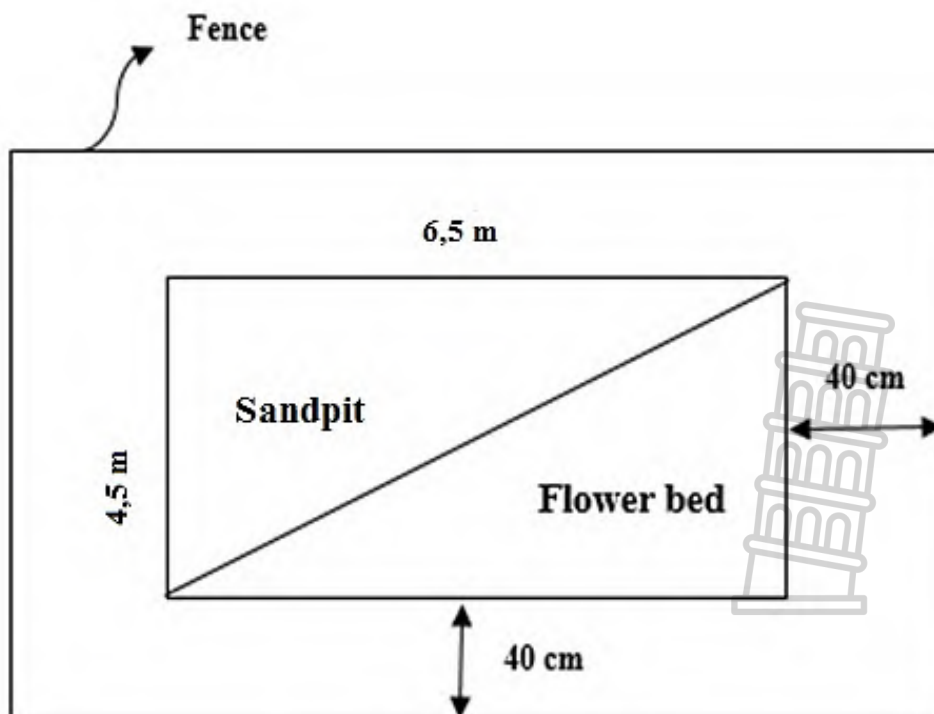
[21]

QUESTION 3

- 3.1 Lerato invites her relatives to spend a weekend at her home. She decides to make pancakes for breakfast. The following recipe serves 10 persons. Lerato would like to serve 15 persons. Use the information in the recipe to answer the questions.

PANCAKES	
Ingredients	
0,25 kg cake flour	
2 eggs	
500 ml water	
5 ml salt	

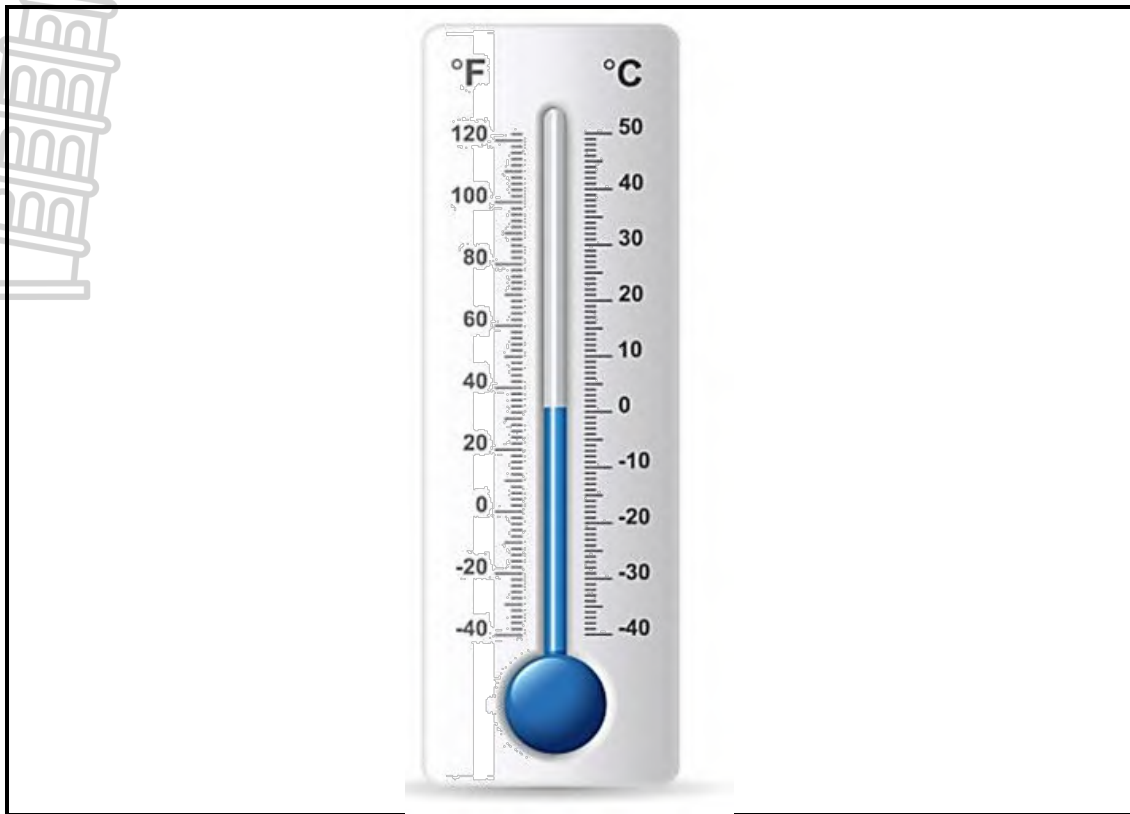
- 3.1.1 Write down, in the simplest form, the number of people the recipe serves as a ratio to the number of people Lerato would like to serve. (2)
- 3.1.2 How much salt and water does Lerato need to make pancakes for 15 people? (2)
- 3.1.3 Determine the amount (in grams) of cake flour Lerato will need to make pancakes for 15 people. (2)
- 3.2 Allison is feeling creative. She is going to divide a patch of ground into a sandpit for her children to play in, and a flower bed which will look pretty. The patch of ground is 6,5 m wide and 4,5 m long from front to back.



She needs to fence the whole area off to prevent the dogs from digging it up. **She will leave a 40 cm border on all sides.** Calculate in metres length of fencing she needs to enclose the entire perimeter. You may use the following formula:

$$\text{Perimeter} = 2 \times \text{length} + 2 \times \text{breadth} \quad (4)$$

3.3 Study the thermometer below and answer the questions.



[Source: holdthesulfites.com]

- 3.3.1 If a patient’s temperature reading is 32 °C, write down what you estimate that the temperature will be in degrees Fahrenheit. (2)
- 3.3.2 Show your accuracy by using the following formula to calculate the exact temperature. Round off the final answer to the nearest whole number.

$$^{\circ}\text{F} = \frac{9}{5} \times ^{\circ}\text{C} + 32^{\circ} \quad (3)$$

[15]

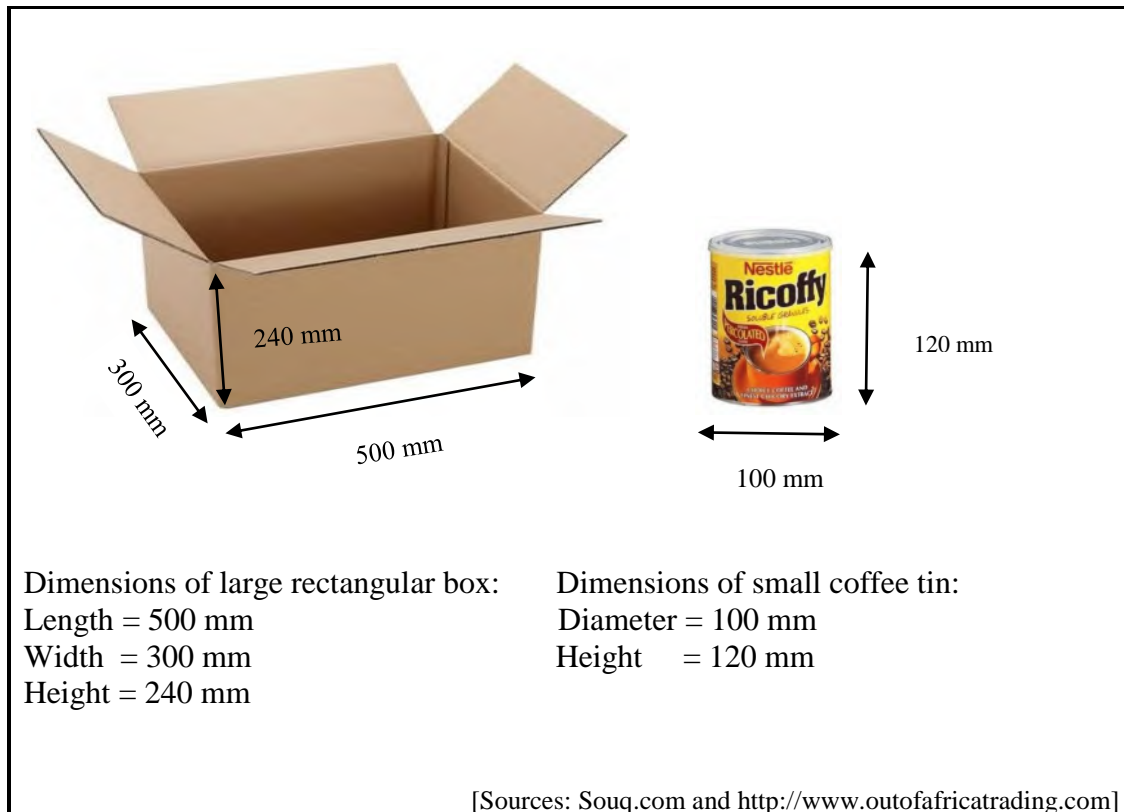


QUESTION 4

4.1 The distance between Kuils River and Beaufort West is 15 cm on a map.

Determine the real distance (in km) between the two towns if the scale on the map is 1 : 3 750 000. (3)

4.2 A tin of Nestlé coffee has a diameter of 100 mm and a height of 120 mm. A cardboard box is 500 mm long, 300 mm wide and 240 mm high. Study the diagrams below and answer the questions.



Determine the maximum number of tins that can be packed in the cardboard box. (5)

[8]

QUESTION 5

5.1 The body mass (in kg) for each member of the under 17 rugby team from Fundakahle High School is recorded in the table below.

Refer to the information and answer the questions that follow.

47	55	53	58	51	60	58	46
55	44	55	50	62	49	52	64

- 5.1.1 Write down the mode for the U-17 rugby team. (2)
 - 5.1.2 Define the term *mean*. (2)
 - 5.1.3 Calculate the median for the U-17 rugby team. (3)
 - 5.1.4 Determine the range of body mass for U-17 rugby team. (2)
- 5.2 A survey was done at Fundakahle High School to determine the number of boys and girls who actually enjoy reading. The results are provided in TABLE 6 below. Study the table and answer the questions that follow.

TABLE 6: SURVEY RESULTS

	Enjoy reading	Do not enjoy reading	TOTAL
Boys	A	212	327
Girls	372	101	473
TOTAL	487	B	800

- Determine the missing values **A** and **B** in the table above. (4)
- 5.3 Determine the probability of a girl being selected by means of random selection. Write your final answer as a percentage of random selection. (3)

[16]

TOTAL: 75





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MARKING GUIDELINE**

MARKS: 75

INSTRUCTIONS AND INFORMATION FOR MARKING	
Symbol	Explanation
M	Method
MA	Method with accuracy
A	Accuracy
CA	Consistent accuracy
RT/RG/RM	Reading from a table/graph/map
SF	Correct substitution in a formula
P	Penalty, e.g. for no units, incorrect rounding off etc.
S	Simplification
R	Rounding off
NPR	No penalty rounding or omitting units
AO	Answers only full marks
C	Conversion

This marking guideline consists of 7 pages.

QUESTION 1			
Quest	Solution	Explanation	L/T
1.1			
1.1.1	R499,00 ✓✓	2RT Reading value from table Answer (2)	L1 F
1.1.2	Total cost price = $90\% \times R499,00$ ✓ $= R449,10$ ✓ OR Total cost price = $\frac{10}{100} \times R499 = R49,90$ ✓ $R499,00 - R49,90 = R449,10$ ✓	1M 1 CA 1M 1CA Answer (2)	L1 F
1.1.3	Original price of item = $R499,00 \div 1,15$ ✓ $= R433,91$ ✓ $= R434,00$ ✓	1M Answer 1Divide by 1,15 1CA Answer (3)	L1 F
1.1.4	Deposit amount = $\frac{15}{100} \times 499,00$ ✓ $= R74,85$ ✓ OR $85\% \times R499,00 = R424,15$ ✓ $R499,00 - R424,15 = R74,85$ ✓	1M Method 1CA Answer 1M Method 1CA Answer (2)	L1 F

Quest	Solution	Explanation	L/T
1.1.5	$\text{Length} = 120 \text{ cm} \div 100 \quad \checkmark$ $= 1,2 \text{ metres} \quad \checkmark$	1M division by 100 1C 2MA Answer (2)	L1 M
1.2	Discrete data is usually whole values / collected by counting people or objects. $\checkmark \checkmark$ Accept any relevant explanation.	2A explanation (2)	L1 D
1.3	This means that every 1 unit on the plan is equivalent to 100 units in real life. $\checkmark \checkmark$ Accept any relevant explanation.	2A explanation (2)	L1 MP
		[15]	
QUESTION 2			
Quest	Solution	Explanation	L/T
2.1			
2.1.1	R13,27 $\checkmark \checkmark$	2RT Reading from the table (2)	L1 F
2.1.2	$\% \text{ change} = \frac{R13,89 - R13,27}{R13,27} \times 100\% \quad \checkmark$ $= \frac{R0,62}{R13,27} \times 100\% \quad \checkmark$ $= 4,67\% \quad \checkmark$	1SF 1S 1CA (3)	L2 F
2.2			
2.2.1	Cost = R0,80 \times 30 \checkmark = R24,00 \checkmark	1M Multiply by 30 1CA amount (2)	L2 F
2.2.2	Time (hrs.+ min) = 2 \times 60 + 30 \checkmark $= 150 \text{ minutes} \quad \checkmark$ $= 150 \times 0,90 \quad \checkmark$ $= R135,00 \quad \checkmark$	1M 1C 1M multiply by 90 cents 1CA answer (4)	L2 F

Quest	Solution	Explanation	L/T
2.2.3	$\text{Cost in rands} = \frac{R135,00}{30} \quad \checkmark$ $= R4,50 \text{ per day} \quad \checkmark$	1M 1CA amount Answer from 2.2.2 (2)	L1 F
2.3	Add parts: $2 + 3 = 5$ Mandy will receive: $\frac{2}{5} \times R500 \checkmark = R200 \checkmark$	1M 1CA amount (2)	L2 F
2.4			
2.4.1	R200 or two hundred rands $\checkmark\checkmark$	2RG (2)	L2 F
2.4.2	2 people $\checkmark\checkmark$	2RG (2)	L2 F
2.4.3	$\text{Costs} = R800 \div 9 \quad \checkmark$ $= R88,888$ $= R88,89 \quad \checkmark$	1M 1CA simplification NPR (2)	L2 F
		[21]	

QUESTION 3

Quest	Solution	Explanation	L/T
3.1			
3.1.1	$10 : 15 \quad \checkmark$ $2 : 3 \quad \checkmark$ OR $1:1,5 \quad \checkmark\checkmark$	1MA Correct ratio 1CA simplification answer is given as a unit ratio (2)	L1 M
3.1.2	Water: $1,5 \times 500 \text{ ml} = 750 \text{ ml} \quad \checkmark$ Salt: $1,5 \times 5 \text{ ml} = 7,5 \text{ ml} \quad \checkmark$	1MA 1MA (2)	L2 M
3.1.3	Flour (grams) = $0,25 \times 1\,000 \checkmark = 250 \text{ grams} \checkmark$	1M 1CA (2)	L1 M

Quest	Solution	Explanation	L/T
3.2	<p>Perimeter fence = $2(6,5 \text{ m} + 0,8 \text{ m}) + 2(4,5 \text{ m} + 0,8 \text{ m})$ ✓</p> <p>= $2(7,3 \text{ m}) + 2(5,3 \text{ m})$ ✓</p> <p>= $14,6 \text{ m} + 10,6 \text{ m}$ ✓</p> <p>= $25,2 \text{ m}$ ✓</p> <p style="text-align: center;">OR</p> <p>Perimeter fence = $2(650 + 80) + 2(450 + 80)$ ✓</p> <p>= $1\,460 \text{ cm} + 1\,060 \text{ cm}$ ✓</p> <p>= $2\,520 \text{ cm} \div 100 \text{ cm}$ ✓</p> <p>= $25,2 \text{ m}$ ✓</p>	<p>1A adding correct lengths 1C conversion to m</p> <p>1CA simplification 1CA answer</p> <p>1A adding correct lengths 1CA simplification</p> <p>1C conversion to m 1CA answer</p> <p style="text-align: right;">(4)</p>	<p>L3 M</p>
3.3			
3.3.1	90 °F ✓✓	<p>2RT Accept 89 to 91 °F (2)</p>	<p>L1 M</p>
3.3.2	<p>$^{\circ}\text{F} = \frac{9}{5} \times 32^{\circ} + 32^{\circ}$ ✓</p> <p>= $57,6 + 32^{\circ}$ ✓</p> <p>= $89,6^{\circ}$</p> <p>= 90°F ✓</p>	<p>1SF</p> <p>1Simplification</p> <p>1CA answer (3)</p>	<p>L2 M</p>
		[15]	



QUESTION 4			
Quest	Solution	Explanation	L/T
4.1	$\text{Distance (in km)} = 15 \text{ cm} \times 3\,750\,000 \checkmark$ $= 56\,250\,000 \div 100\,000 \checkmark$ $= 562,5 \text{ km} \checkmark$	1M 1C 1CA answer (3)	L1 MP
4.2	Length $500 \text{ mm} \div 100 \text{ mm} = 5 \text{ tins} \checkmark$ Width $300 \text{ mm} \div 100 \text{ mm} = 3 \text{ tins} \checkmark$ Height $240 \text{ mm} \div 120 \text{ mm} = 2 \text{ tins} \checkmark$ Total number of tins $5 \times 3 \times 2 \checkmark = 30 \text{ tins} \checkmark$	1M dividing 1M dividing 1M dividing 1M multiplying 1CA simplification (5)	L2 MP
[8]			
QUESTION 5			
Quest	Solution	Explanation	L/T
5.1			
5.1.1	Mode 55 $\checkmark\checkmark$	2RT (2)	L1 D
5.1.2	Mean is a type of average obtained when all the scores are added together and then divided by the number of scores. $\checkmark\checkmark$ Accept any relevant explanation.	2A explanation (2)	L1 D
5.1.3	44; 46; 47; 49; 50; 51; 52; 53; 55; 55; 55; 58; 60; 62; 64 \checkmark Median = $\frac{53 + 55}{2}$ $= \frac{108}{2} \checkmark$ $= 54 \checkmark$	1M arranging values in ascending order 1M simplifying 1A correct value (3)	L1 D

Quest	Solution	Explanation	L/T
5.1.4	$\text{Range} = 64 - 44$ ✓ $= 20$ ✓	1M 1A (2)	L1 D
5.2			
5.2.1	$A = 327 - 212$ ✓ $B = 212 + 101$ ✓ $= 115$ ✓ $= 313$ ✓ <p style="text-align: center;">OR</p> $A = 487 - 372$ ✓ $B = 800 - 487$ ✓ $= 115$ ✓ $= 313$ ✓	2 MA for A value 2MA for B value 2MA for A value 2MA for B value (4)	L1 D
5.3	$P(\text{Girl}) = \frac{473}{800}$ ✓ $= 0,59125 \times 100$ ✓ $= 59,125\%$ $= 59,13\%$ ✓	1RT numerator 1M multiply by 100 CA answer NPR (3)	L1 P
		[16]	
	TOTAL:	75	

