

# **Education**

**KwaZulu-Natal Department of Education  
REPUBLIC OF SOUTH AFRICA**

**MATHEMATICAL LITERACY P1**

**COMMON TEST**

**JUNE 2017**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 10**

**MARKS: 50**

**TIME: 1 hour**

**This question paper consists of 7 pages.**

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of **FOUR** questions. Answer **ALL** the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. Start **EACH** question on a **NEW** page.
4. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
5. Show **ALL** the calculations clearly.
6. Round **ALL** the final answers off appropriately according to the given context, unless stated otherwise.
7. Indicate units of measurement, where applicable.
8. Write neatly and legibly.

**QUESTION 1**

- 1.1 A restaurant pays a waiter R18 per hour. In one week he worked 5 shifts from 12h00 to 23h00.
- 1.1.1 Calculate the number of hours the waiter works per shift. (2)
- 1.1.2 Determine his total wage for the week. (3)
- 1.2 A box of smarties contains 6 red, 4 yellow; 3 white; 7 blue and 5 green smarties only.
- If a smartie is selected at random, determine the probability that the colour of the smartie will be:
- 1.2.1 black (2)
- 1.2.2 white (2)
- [9]**

**QUESTION 2**

2.1

Lucas and Lindiwe are a married couple who prepared this budget. TABLE 1 below shows their budget for February 2017.

**TABLE 1: Lucas and Lindiwe's Budget**

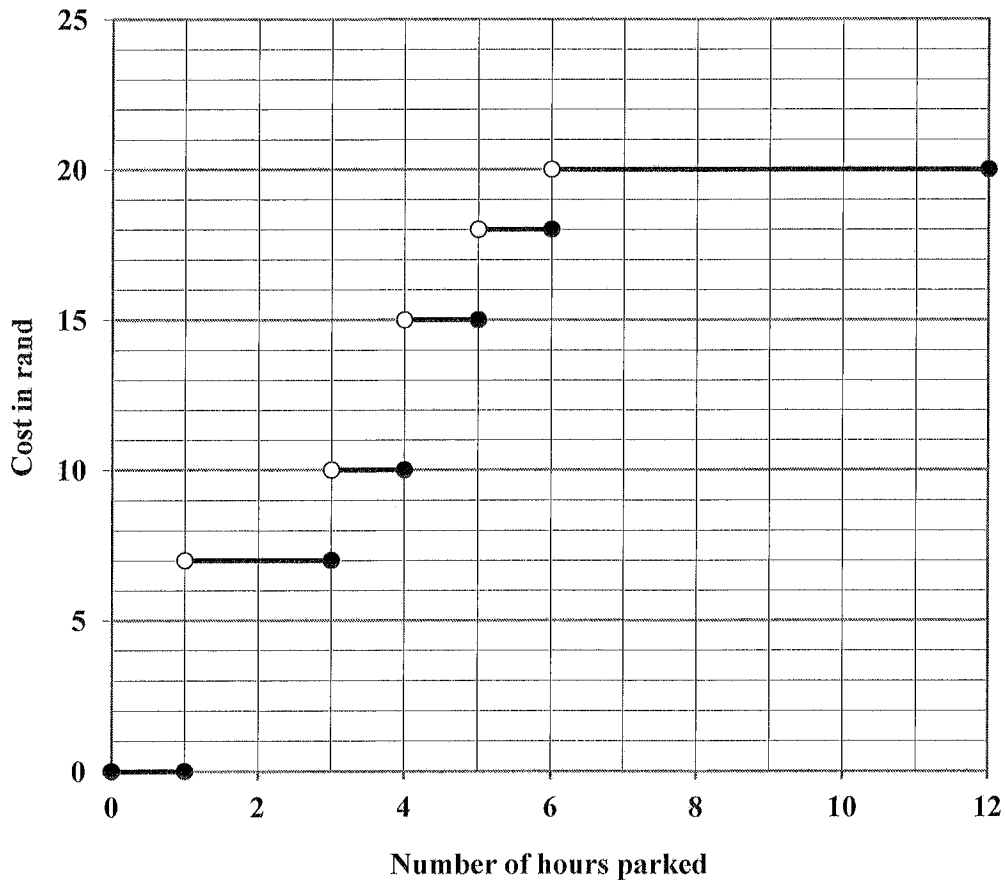
	<b>Lucas</b>	<b>Lindiwe</b>
<b>Income(salary)</b>	<b>R16 470,00</b>	<b>R 12 550,00</b>
<b>Expenditure</b>		
Home loan	R9 879,45	
Car finance & insurance		R5 534,70
Education policy	R 200,00	
Funeral policy	R 245,00	
Life cover policy	R 650,00	R 500,00
Petrol	R 950,00	
Furniture instalment	R 690,00	
Clothing		R 900,00
Water and electricity	R 990,00	
Food/cleaning material		R3 500,00
School fees	R 780,00	
Entertainment		R 500,00
Cell phone bills	R 300,00	R 200,00
<b>TOTAL</b>	<b>A</b>	<b>R10 684,70</b>

- 2.1.1 Calculate A, Lucas's total expenses for February. (2)
- 2.1.2 Determine how much Lindiwe has left over after paying all her expenses. (2)
- 2.1.3 Calculate the amount that Lindiwe spends on clothing as a percentage of her total income. (2)
- 2.1.4 In February the cost of petrol was R11,95 per litre.  
Determine how many litres of petrol Lucas filled in his car. Round your answer off to the nearest litre. (3)
- 2.1.5 The average fuel consumption of their car is 6,3 litres per 100 km.  
Calculate how far (to the nearest 5 km) can they travel with 45 litres of fuel. (3)

2.2

Lindiwe visited a shopping mall to pay her clothing account. She parked in the parking garage.  
The graph below shows the cost of parking at a parking garage that is open 12 hours daily.

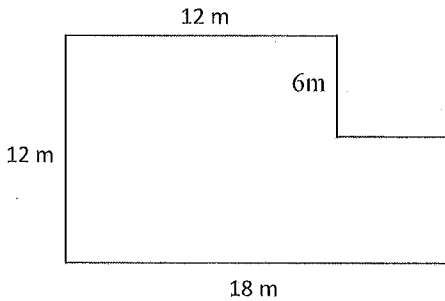
**COST OF PARKING IN THE PARKING GARAGE**



- 2.2.1 What is the maximum time that you can park at the parking garage for free? (2)
  - 2.2.2 If you paid R10,00 for parking, how long was your car at the parking garage? (2)
  - 2.2.3 How much would you pay if you parked your car at the parking garage for 6 hours 42 minutes? (2)
- [18]

**QUESTION 3**

3.1 The diagram below represents a sketch of a garden.

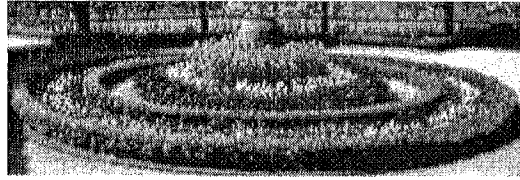


3.1.1 Calculate the perimeter of the garden. (3)

3.1.2 Determine the area of the garden.  
You may use the formula:

**Area of a rectangle = length  $\times$  breadth** (4)

3.2 A circular flower bed has a radius of 2,5 m.



3.2.1 Write down the diameter of the flower bed. (2)

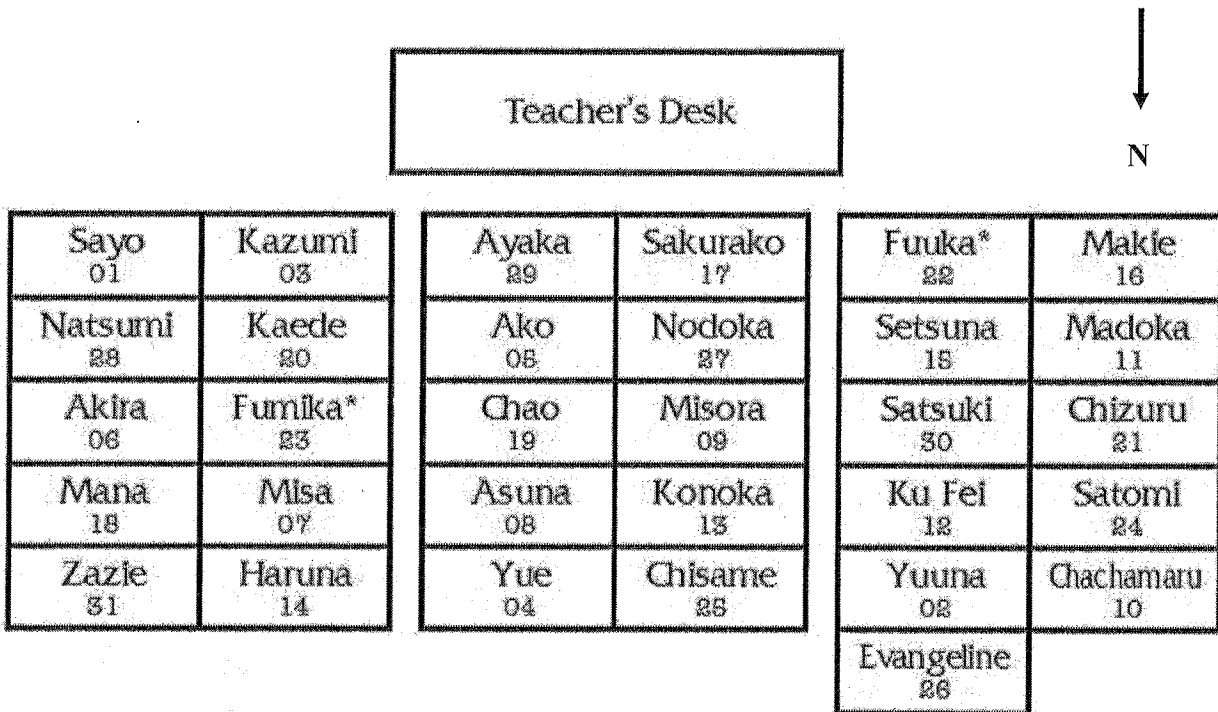
3.2.2 Calculate the circumference of the flower bed.

You may use the formula:

**Circumference of circle =  $2 \times \pi \times \text{radius}$ .** Use  $\pi = 3,142$  (3)  
**[12]**

## QUESTION 4

The seating plan of a classroom is given below.

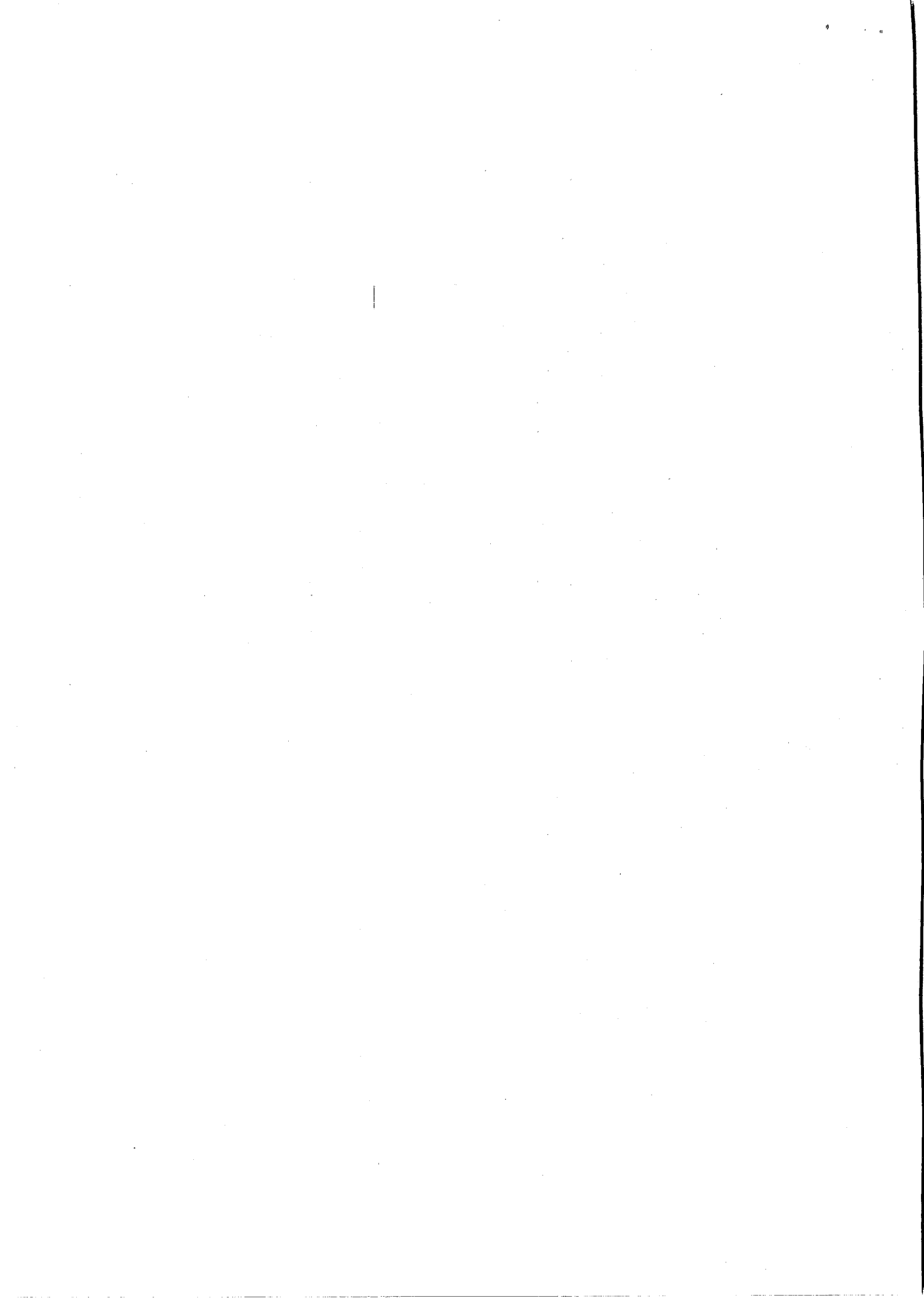


Source: [http://en.wikipedia.org/wiki/file:Negima\\_seat\\_Plan.jpg](http://en.wikipedia.org/wiki/file:Negima_seat_Plan.jpg)

- 4.1 Define the term seating plan. (2)
- 4.2 Madoka is seating in which seat number? (2)
- 4.3 In which direction is the teacher's desk from Evangeline? (2)
- 4.4 Which seat numbers are second from the last row and directly opposite the teacher's desk? (2)
- 4.5 Kaede wants to go to Fuuka to get his calculator.  
Describe possible direction he will have to follow without disturbing the lesson. (3)

[11]

**TOTAL MARKS: 50**







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MARKING GUIDELINE

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MARKS: 50

Symbol	Explanation
M	Method
M/A	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy (Answer)
C	Conversion
S	Simplification
RT / RG / RM	Reading from table / Reading from graph / Reading from map
F	Choosing the correct formula
SF	Substitution in formula
O	Opinion
P	Penalty e.g. for no units, incorrect rounding, etc
R	Rounding off / Reason
U	Unit
AO	Answer only full marks

This marking guideline consists of 6 pages.

Ques	Solution	Explanation	Topic/L
1.1.1	Time from 12h00 to 23h00 = 11 hours ✓✓A	2A answer	F L1 (2)
1.1.2	Daily wage = $11 \times R18,00$ ✓M = R198 ✓CA Weekly wage = $5 \times R198,00$ = R990,00 ✓CA <b>OR</b> Weekly wage = $11 \times R18,00 \times 5$ ✓M = R990,00 ✓CA	1M multiplying ICA daily wage  ICA weekly wage  ICA 11 hour 1M multiplying ICA weekly wage  AO	F L2 (3)
1.2.1	$P_{\text{back}} = 0 \checkmark \checkmark A$	2A solution	P L1 (2)
1.2.2	$P_{\text{white}} = \frac{3}{25} \checkmark A$	1A numerator 1 denominator	P L2 (2) (9)

Ques	Solution	Explanation	Topic/L
2.1.1	Expenses = R9 879,45 + R200 + R245 + R650 + R950 + R690 + R990 + R780 + R300 = R14 684,45 ✓A	IM adding IA solution AO (2)	F L1
2.1.2	Amount left = R12 550,00 – R10 684,70 ✓M = R1865,30 ✓A	IM subtracting IA solution Answer Only AO (no penalty if reversed with positive answer) (3)	F L1
2.1.3	% spent on clothing = $\frac{900}{12\,550} \times 100\%$ ✓M = 7,17% ✓A	IM % concept IA solution AO (2)	F L1
2.1.4	Number of litres petrol = $\frac{R950}{R11,95}$ ✓M = 79,4979... ✓A = 79 ✓R	IM dividing IA simplification IR rounding AO (3)	F L1
2.1.5	6,3 litres : 100 km ✓M 45 litres will cover: $\frac{45}{6,3} \times 100$ km ✓A = 714,2857... = 710 km ✓A	IM ratio concept IA × 100 IR rounding AO (3)	F L2

Ques	Solution	Explanation	Topic/L
2.2.1	1 hour ✓✓RG	2RG reading (2)	F L1
2.2.2	More than 3 hours but less than 4 hours ✓✓RG	2RG reading (2) (accept any time between 3 - 4 hours)	F L1
2.2.3	R20,00 ✓✓RG	2RG reading (2) 18	F L1

**QUESTION 3 [12 marks]**

Ques	Solution	Explanation	Topic/L
3.1.1	$\begin{aligned} \text{Perimeter} &= 12\text{ m} + 12\text{ m} + 6\text{ m} + 6\text{ m} + 18\text{ m} \\ &= 60\text{ m} \quad \checkmark\text{CA} \end{aligned}$ <p style="text-align: center;"><b>OR</b></p> $\begin{aligned} \text{Perimeter} &= 2 \times (12\text{ m} + 18\text{ m}) \\ &= 60\text{ m} \quad \checkmark\text{CA} \end{aligned}$	1M adding 1A all values correct 1CA solution  1M adding 1A all values correct 1CA solution (omitting/extra 1 length max 2/3)	M L2
3.1.2	$\begin{aligned} \text{Area of the garden} &= 12\text{ m} \times 18\text{ m} - (6\text{ m} \times 6\text{ m}) \quad \checkmark\text{SF} \\ &= 216\text{ m}^2 - 36\text{ m}^2 \\ &= 180\text{ m}^2 \quad \checkmark\text{A} \quad \checkmark\text{CA} \end{aligned}$ <p style="text-align: center;"><b>OR</b></p> $\begin{aligned} \text{Area of the garden} &= 12\text{ m} \times 6\text{ m} + 18\text{ m} \times 6\text{ m} \\ &= 72\text{ m} + 108\text{ m} \\ &= 180\text{ m}^2 \quad \checkmark\text{A} \quad \checkmark\text{CA} \end{aligned}$ <p style="text-align: center;"><b>OR</b></p> $\begin{aligned} \text{Area of the garden} &= 6\text{ m} \times 6\text{ m} + 12\text{ m} \times 12\text{ m} \\ &= 36\text{ m} + 144\text{ m} \\ &= 180\text{ m}^2 \quad \checkmark\text{A} \quad \checkmark\text{CA} \end{aligned}$	1M subtracting 1SF substitution 1A simplification 1CA solution  1M addition 1SF substitution 1A simplification 1CA solution  1M addition 1SF substitution 1A simplification 1CA solution	M L2
3.2.1	$\begin{aligned} \text{Diameter} &= 2 \times 2,5\text{ m} \\ &= 5\text{ m} \quad \checkmark\text{A} \end{aligned}$	1MA diameter concept 1A diameter  <div style="border: 1px solid black; padding: 2px; display: inline-block;">AO</div>	M L1
3.2.2	$\begin{aligned} \text{Circumference} &= 2 \times 3,142 \times 2,5\text{ m} \\ &= 15,71\text{ m} \quad \checkmark\text{A} \quad \checkmark\text{SF} \end{aligned}$ <p style="text-align: center;"><b>OR</b></p> $\begin{aligned} \text{Circumference} &= 3,142 \times 5 \\ &= 15,71\text{ m} \quad \checkmark\text{A} \quad \checkmark\text{SF} \end{aligned}$	1SF substitution 1A solution 1A unit  1SF substitution 1A solution 1A unit	M L2

**QUESTION 4 [11 marks]**

Ques	Solution	Explanation	Topic/L
4.1	$\begin{aligned} \checkmark\text{A} \\ \checkmark\text{A} \end{aligned}$ <p>It is a diagram that determines where people should take their seats.</p> <p style="text-align: center;"><b>OR</b></p> $\begin{aligned} \checkmark\text{A} \\ \checkmark\text{A} \end{aligned}$ <p>It is a plan which shows where each person is to sit in a venue.</p>	1A Diagram/Plan 1A Sit  1A Diagram/Plan 1A Sit	MP L1
4.2	$11 \quad \checkmark\checkmark\text{A}$	2A answer	MP L1
4.3	$\text{South East} \quad \checkmark\checkmark\text{A} \quad \text{OR} \quad \text{SE} \quad \checkmark\checkmark\text{A}$	2A answer	MP L1
4.4	$\checkmark\text{A} \quad \checkmark\text{A}$ <p>4 and 25</p>	1A for 4 1A for 25	MP L1
4.5	$\begin{aligned} - \text{Turn right towards the back of the class.} \\ - \text{Turn left and pass seat 4 \& 25} \\ - \text{Turn left to the aisle and Funku will be seated on the right.} \end{aligned}$	$\begin{aligned} \checkmark\text{A} \\ \checkmark\text{A} \\ \checkmark\text{A} \end{aligned}$ <p>1A initial procession                      1A direction at the back                      1A final destination</p>	MP L3

**TOTAL MARKS: 50**

