LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY

TERM 2 INVESTIGATION

MAY 2026

MARKS: 100 **TIME: 2 HOURS**

This question paper consists of 5 pages including ANNEXURE and RUBRIC.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions in TWO SECTIONS.
2. Number answers correctly according to the numbering system used in this question paper.
3. Use ANNEXURE A to answer ALL QUESTIONS.
4. An approved calculator (non-programmable and non-graphical) may be used.
5. All the final answers must be rounded off according to the context, unless stated otherwise.
6. Units of measurement must be indicated, where applicable

This paper consists of 6 pages.

SECTION A: 60 Marks

1 You are required to conduct an investigation into how scale is used to represent real-world distances and measurements. Use the attached map to complete the following activities.

Use the information above and answer the following questions:

1.1 Explain the meaning of the following terms as used in Mathematical Literacy.

1.1.1 Route map (2)
1.1.2 North elevation map (2)
1.1.3 Strip map (2)
1.1.4 Bar scales (2)
1.1.5 A 3-D model (2)

1.2 Name the national roads that passes through Bloemfontein on the map. (4)
1.3 Name the type of scale used on the map. (2)
1.4 Write down the scale of the map of Bloemfontein in the form 1: ….. (2)
1.5 Give the general direction from
1.5.1 Ehrilioh Park to Dan Pienaar (2)
1.5.2 Wilgehof to Ooseinde (2)
1.5.3 Hilton to Gardenia Park (2)
[24]

2 Measure three different routes from Willows to Oranjesig and complete the table below:

Route	Distance in mm	Distance in cm	Actual distance in km
1. Going to east and turning right…	(1)	(1)	(2)
2. Going to south and turning left…	(1)	(1)	(2)
3. Direct distance	(1)	(1)	(2)

(12)

3 3.1 Which one of the routes is the shortest? (2)
3.2 Give a reason the direct distance cannot be used to travel between Willows and Oranjesig. (2)
[4]

4 4.1 Explain how scale is important in everyday contexts. (2)
4.2 Provide two examples where scale can be applied in real life. (4)
[6]

5

Body mass index (BMI) is a measure of body fat based on height and weight that applies to adult men and women. It is based on height and weight but doesn't consider muscle mass, bone density, or body composition.

The table below shows the height, mass and BMI of learners

Learner	Age	Height (m)	Mass (kg)	BMI
Takalani	19	1.65	65	**A**
Tshepang	16	1.62	68	**B**
Johnes	14	1.56	66	**C**
Gert	18	1.55	**D**	25.8
Paul	16	1.63	**E**	26.7
Ndumiso	15	**F**	81	29.4
Vuyo	18	**G**	63	25.2

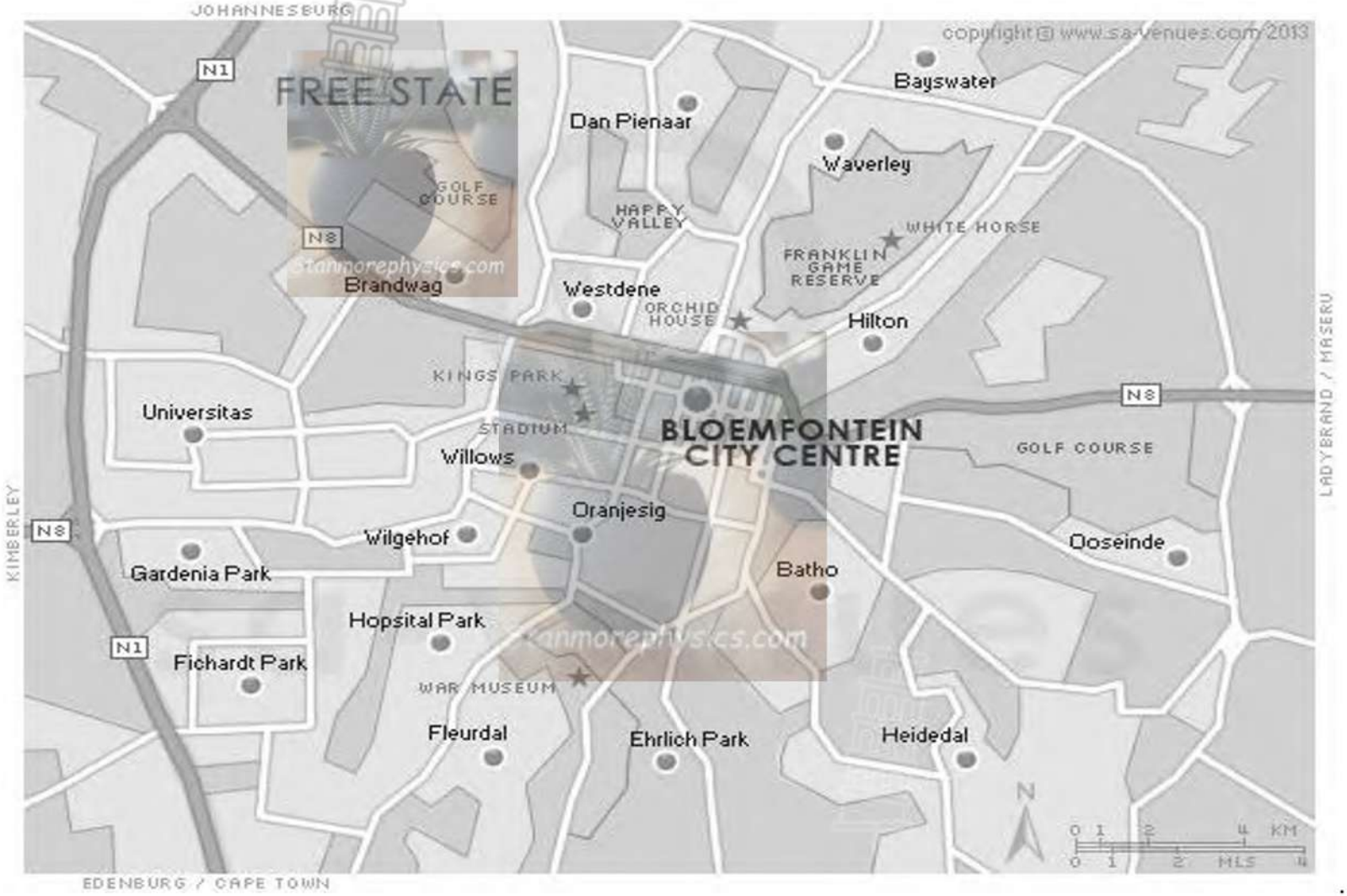
Determine the values of A, B, C, D, E, F and G.

Use this formula $\textbf{Body mass index} = \frac{\textbf{weight (kg)}}{[\textbf{Height (m)}]^2}$

(14)

TOTAL: 100

ANNEXURE A: MAP OF BLOEMFONTEIN



Source: www.sa-venues.com

SECTION B: 40 Marks

RUBRIC FOR INVESTIGATION

Name: _____

CRITERIA	0	1	2	3	4	MAX MARKS	LEARNER'S MARK
Explanation of MLIT terms	No attempt	One correct	2 correct	3 or 4 correct	All 5 correct	4	
Identifying the national routes through Bloemfontein on the map	No attempt	Incorrect routes	One correct route identified	All correct		3	
Type of scale	No attempt	Incorrect type of scale	Correct type of scale			2	
Ratio scale	No attempt	Incorrect scale	Correct scale	Scale in unit form		3	
General direction	No attempt	Incorrect directions	One correct direction	Two correct directions	All correct directions	4	
Measured distances in mm	No attempt	Incorrect measurements	One correct measurement	Two correct measurements	Three correct measurements	4	
Converting distances to cm	No attempt	Incorrect conversions	One correct conversions	Two correct conversions	Three correct conversions	4	
Converting distances to km	No attempt	Incorrect conversions	One correct conversions	Two correct conversions	Three correct conversions	4	
Identification of the shortest route and reason	No attempt	Incorrect route	Correct route without reason	Correct route and invalid reason	Correct route with valid reasoning	4	
Importance of scale & examples	No attempt	Incorrect explanation	Correct explanation of scale	Correct explanation of scale with one example	Correct explanation of scale with two examples	4	
Height, mass and BMI	No attempt	1 – 2 correct	3 – 4 correct	5 – 6 correct	All 7 correct	4	
						40	

Learner's total mark	
	40

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY
TERM 2 INVESTIGATION
MARKING GUIDELINE
MAY 2026

MARKS: 100

SYMBOL/SIMBOOL	EXPLANATION/VERDUIDELIKING
M	Method/METODE
MA	Method with Accuracy/metode met akkuraatheid
CA	Consistent accuracy/konstante akkuraatheid
RCA	Rounding consistent Accuracy/afrond konstante akkuraatheid
A	Accuracy/akkuraatheid
O	Opinion/Explanation/ verduideliking
C	Conversion/omskakeling
S	Simplification/vereenvoudiging
RT/RG/RD/RM	Reading from table/Reading from graph/Reading from diagram/Reading from map/lees van grafiek ,diagram,kaart
F	Choosing the correct formula/korrekte formule
SF	Correct substitution in a formula/korrekte substitusie in formule
J	Justification/regverdiging
P	Penalty e.g. for no units, incorrect rounding offetc./pennaliseer vir eenhede,afrond ens.
Ro	Rounding /afrond
NPU/NPR	No Penalty for units/ No Penalty for rounding.
AO	Answer only, full marks/antwoord alleen vol punte.

This question paper consists of 4 pages.

PART 1

QUES	SOLUTION	EXPLANATION
1.1.1	Route map shows a specific route, for instance for an event, as seen from above.	2O correct explanation
1.1.2	North elevation map shows the side of the building that is in front of you when you are facing the compass direction 'North'.	2O correct explanation
1.1.3	Strip map is map of a section of a travelling route.	2O correct explanation
1.1.4	Bar scales presented as a picture, it means that if you placed a ruler next to this scale, you could determine how many centimetres next to this scale, you could determine how many centimetres represent the specified kilometres.	2O correct explanation
1.1.5	A 3-D model is a dimensional construction of real-life objects.	2O correct explanation
1.2	N1 ✓✓ N8✓✓	2RT: N1 2RT: N8
1.3	Bar scale✓✓	2A correct scale
1.4	25 mm : 4 km✓ 25 mm : 4 000 000 mm 1: 160 000✓	1RT correct values 1S correct scale
1.5.1	North✓✓	2A correct direction
1.5.2	East✓✓	2A correct direction
1.5.3	South West✓✓	2A correct direction
2		

Route	Distance in mm	Distance in cm	Actual distance in km
1. Going east and turn right…	16±1✓	1,6±0,1✓	2,56✓✓
2. Going south and turn left…	16±1✓	1,6±0,1✓	2,56✓✓
3. Direct distance	11±1✓	1,1±0,1✓	1,76✓✓

3 x 1A correct measured values in mm
3 x 1A correct converted values to cm
3 x 2A correct converted values to km

(12)

3.1	Direct route✓✓	2O correct route

QUES	SOLUTION	EXPLANATION
3.2	There is no visible road ✓✓ **OR** There could be buildings/other structures✓✓	2O Accept any valid reason
4.1	A scale helps to give a manageable representation of the real-world objects ✓✓ **OR** Any other relevant reason/description.	2A valid reason
4.2	• Drawing of bridges on paper✓✓ • Representation of models✓✓ • House/floor plans✓✓	2 x 2A any two valid examples
5	**Body mass index** $= \frac{\textbf{weight (kg)}}{[\textbf{Height (m)}]^2}$ A $= \frac{65\ kg}{[1.65\ m]^2}$✓ $= 23.9\ kg/m^2$✓ B $= \frac{68\ kg}{[1.62\ m]^2}$✓ $= 25.9\ kg/m^2$✓ C $= \frac{66\ kg}{[1.56\ m]^2}$✓ $= 27.1\ kg/m^2$✓ $25.8 = \frac{D}{[1.55\ m]^2}$✓ $D = 61.98\ kg$✓ $26.7 = \frac{E}{[1.63\ m]^2}$✓ $E = 70.94\ kg$✓ $29.4 = \frac{81\ kg}{F^2}$✓ $F = 1.74\ m$✓ $25.2 = \frac{63\ kg}{G^2}$✓ $G = 1.58\ m$✓	1S substitution 1S answer 1S substitution 1S answer 1S substitution 1S answer 1S substitution 1S answer 1S substitution 1S answer 1S substitution 1S answer (14)
	GRAND TOTAL: 60	

PART 2

RUBRIC FOR INVESTIGATION

CRITERIA	0	1	2	3	4	MAX MARKS	LEARNER'S MARK
Explanation of MLIT terms	No attempt	One correct	2 correct	3 or 4 correct	All 5 correct	4	
Identifying the national routes through Bloemfontein on the map	No attempt	Incorrect routes	One correct route identified	All correct		3	
Type of scale	No attempt	Incorrect type of scale	Correct type of scale			2	
Ratio scale	No attempt	Incorrect scale	Correct scale	Scale in unit form		3	
General direction	No attempt	Incorrect directions	One correct direction	Two correct directions	All correct directions	4	
Measured distances in mm	No attempt	Incorrect measurements	One correct measurement	Two correct measurements	Three correct measurements	4	
Converting distances to cm	No attempt	Incorrect conversions	One correct conversions	Two correct conversions	Three correct conversions	4	
Converting distances to km	No attempt	Incorrect conversions	One correct conversions	Two correct conversions	Three correct conversions	4	
Identification of the shortest route and reason	No attempt	Incorrect route	Correct route without reason	Correct route and invalid reason	Correct route with valid reasoning	4	
Importance of scale & examples	No attempt	Incorrect explanation	Correct explanation of scale	Correct explanation of scale with one example	Correct explanation of scale with two examples	4	
Height, mass and BMI	No attempt	1 – 2 correct	3 – 4 correct	5 – 6 correct	All 7 correct	4	
						40	

FINAL MARK:

SECTION	PART 1	PART 2	TOTAL
MAX MARKS	60	40	100
LEARNER MARK			