



education

MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

FURTHER EDUCATION AND TRAINING
GERT SIBANDE DISTRICT

GRADE 12

Stanmorephysics.com

MATHEMATICAL LITERACY

CLASS TEST

SCALE AND MAPS

Stanmorephysics.com

MARKS: 50

TIME: 1 Hour

This test consists of 10 pages including 4 annexures

INSTRUCTIONS AND INFORMATION



1. This test consists of FOUR questions.

2. Use ANNEXURE A to answer question 1

Use ANNEXURE B to answer question 2

Use ANNEXURE C to answer question 3

Use ANNEXURE D to answer question 4

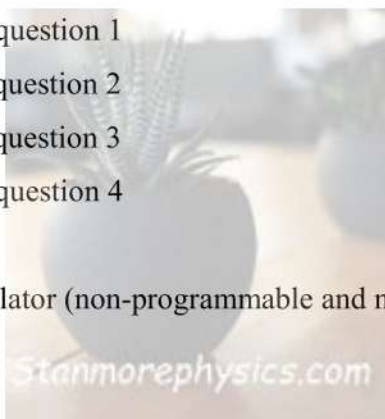
3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.

4. Number the answers correctly according to the numbering system used in this test.

5. All calculations must be shown clearly.

6. All final answers must be rounded off according to the given context.

7. Write neatly and legibly.





QUESTION 1

Thandi is a teacher who is relocating to Durban. She is trying to find her way around the city. Annexure A shows the map of Durban.

Use the information in Annexure A to answer the following questions:

- 1.1 Identify the type of map on Annexure A. (2)
- 1.2 Name the sport venue that is North East of Berea. (2)
- 1.3 Identify three types of roads found on this map. (3)
- 1.4 What is the general direction from Congella to the Westridge? (2)
- 1.5 Explain what the number scale 1 : 25 000 represents on the map. (2)

[11]

QUESTION 2

Kyle is travelling from Durban to Port Elizabeth to visit family. Annexure B shows the map of Durban to Port Elizabeth.

Use the map in Annexure B to answer the following question:

- 2.1 Identify the type of map found in Annexure B. (2)
- 2.2 Use the map to determine the distance from Durban to Port Elizabeth. (2)

2.3 Kyle is picking up a friend in East London and dropping him off in Grahamstown. Calculate the distance between these two towns. (3)

2.4 Kyle's sister stays in Port Shepstone and wants to visit her friend in Port St Johns for the weekend.

2.4.1 Calculate the distance from Port Shepstone to Port St Johns and give the name of the road to be travelled on. (3)

2.4.2 If Kyle's sister travels at an average speed of 100km/h; at what time will she reach Port St Johns if she leaves her home at 15:15? (4)

You may use the formula : distance = speed x time

2.4.3 Kyle's brother stays in Kei Mouth and needs to drive to Aliwal North for Business. Describe the route he could follow indicating:

- The name of the roads (3)
- The distances to be driven between towns
- The names of the towns that he will pass through.

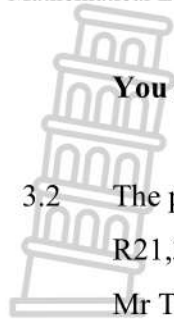
[17]

QUESTION 3

One weekend Mr Thwala decided to visit his uncle in Mbabane, Swaziland. He travelled on the national roads from Polokwane. Annexure C is a road map from Limpopo, Mpumalanga and Swaziland.

Use Annexure C to answer the questions that follow:

3.1 The distance from Polokwane to Mbabane is 430,6km. Mr Thwala took 5hours 36minutes to drive between these two cities. Calculate the average speed (to the nearest km/h) he drove from Polokwane to Mbabane. (4)



You may use the following formula: Distance = speed x time

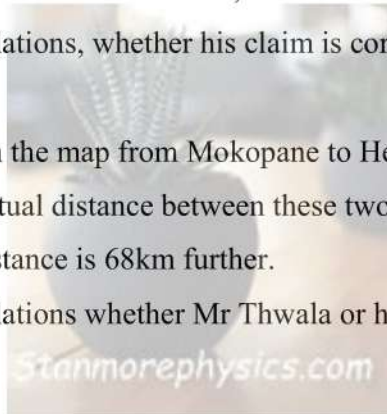
- 3.2 The petrol consumption for Mr Thwala's car is 11km/litre and the petrol price is R21,35 per litre.

Mr Thwala claims that the amount that he will spend on petrol to Mbabane and back to Polokwane will be more than R1500,00. (5)

Verify, showing all calculations, whether his claim is correct.

- 3.3 The measured distance on the map from Mokopane to Hendrina is 8,7cm Mr Thwala claims that the actual distance between these two towns is 266,6km His brother claims that the distance is 68km further. (5)

Verify, showing all calculations whether Mr Thwala or his brother's claim is correct.



[14]

QUESTION 4

Mpho and his colleagues decided to participate in the Buffalo Marathon; which starts at 05:00.

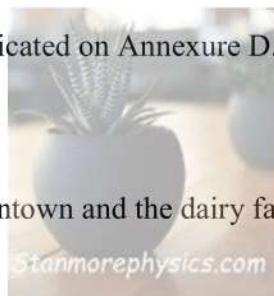
The route map of the marathon is indicated on Annexure D. Study the map and answer the following questions.

- 4.1 What is the distance between Macleantown and the dairy farm? (2)

- 4.2 Moloko started the race at 05:00 and reached Python Park at 08:45. Determine the time taken in hours to reach Python Park. (2)

- 4.3 Determine Moloko's average speed from the starting point to Python Park in km/h. (2)

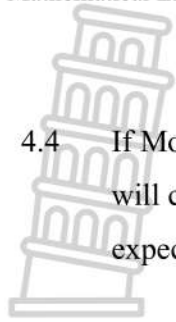
You may use the following formula: Distance = speed x time.



Mathematical Literacy

6
FET

Gr 12 Maps Class test GSD



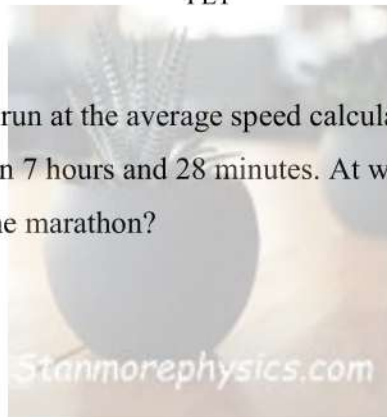
- 4.4 If Moloko continues to run at the average speed calculated in question 4.3; he will complete the race in 7 hours and 28 minutes. At what time can he be expected to complete the marathon?

(2)

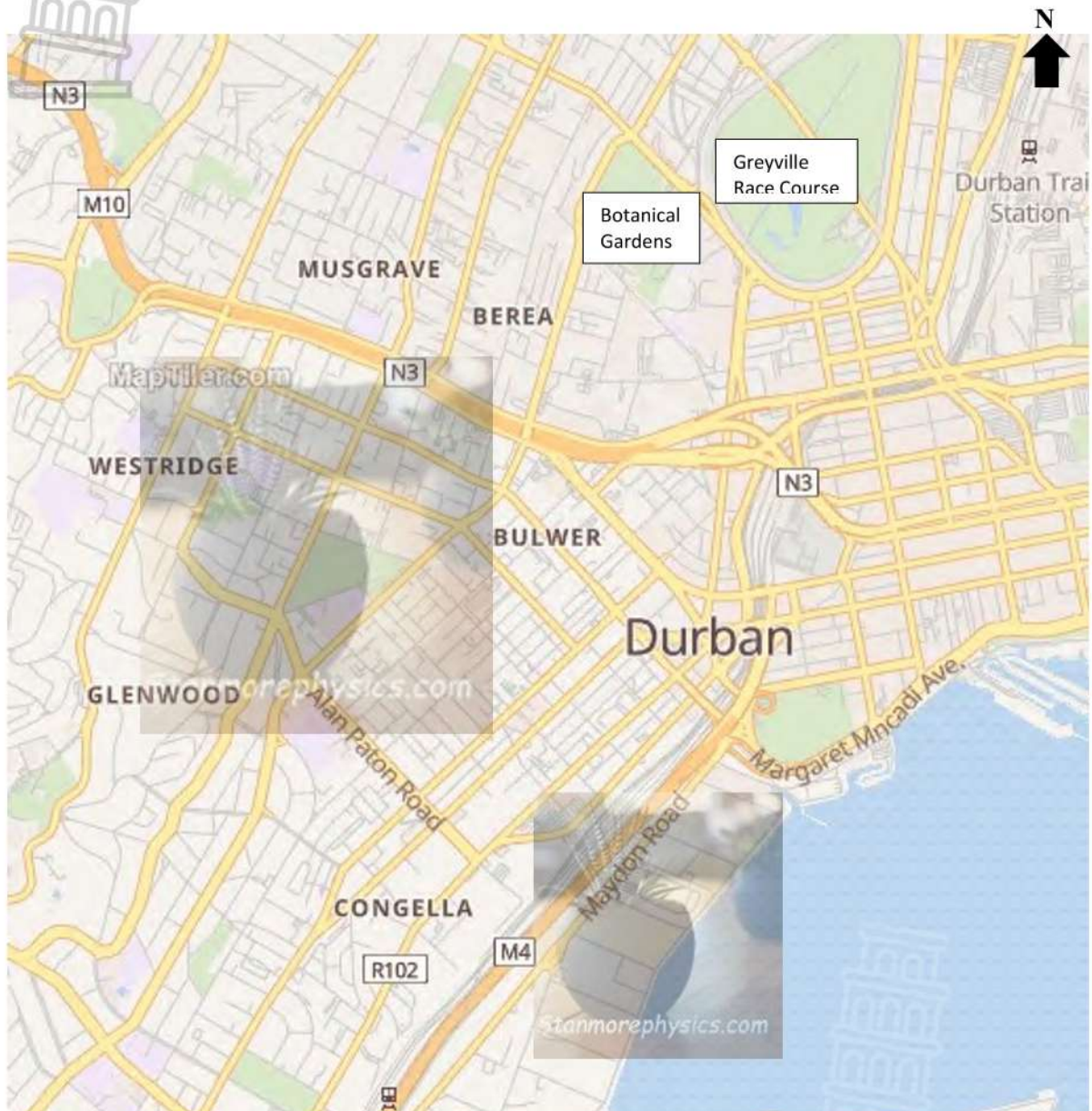
[8]

TOTAL

[50]



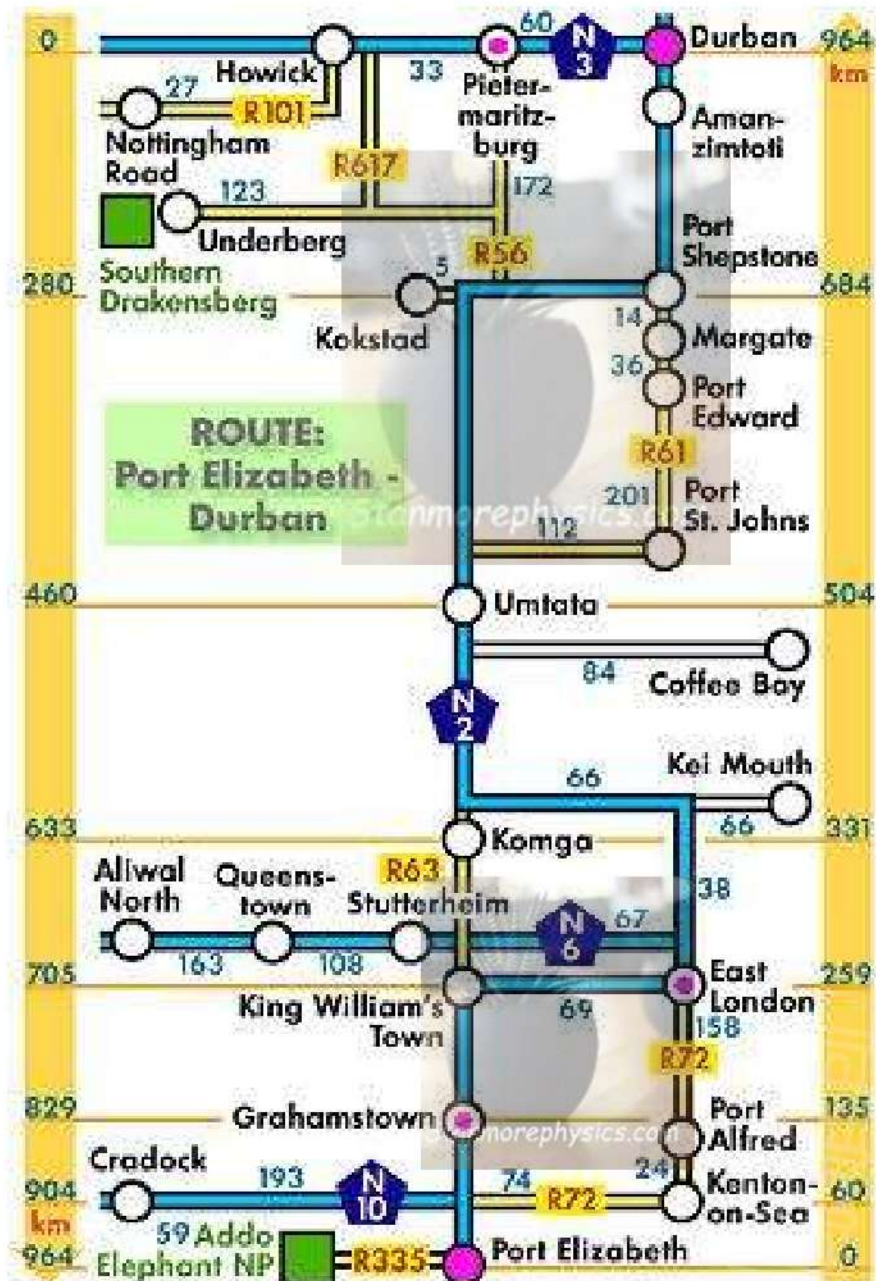
ANNEXURE A



Scale 1: 25 000

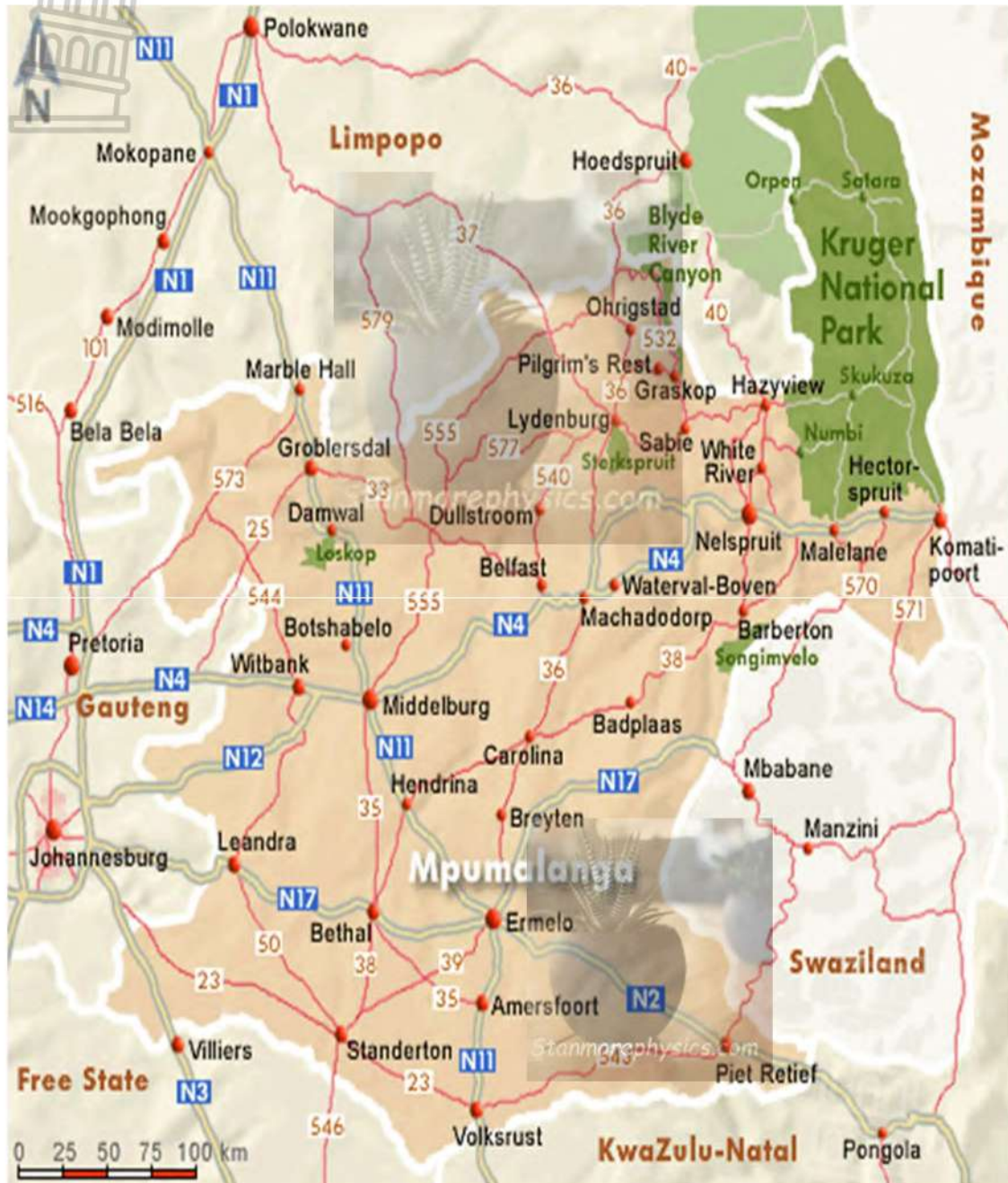
source: google maps

ANNEXURE B:



Source: google maps

ANNEXURE C:



Source: google maps

ANNEXURE D:



source: m.facebook.com



education

DEPARTMENT: EDUCATION
MPUMALANGA PROVINCE

FURTHER EDUCATION AND TRAINING

GRADE 12

MATHEMATICAL LITERACY

GERT SIBANDE DISTRICT

CLASS TEST: SCALE AND MAPS

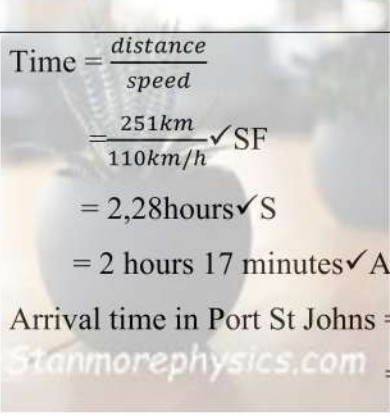
MARKING GUIDELINES

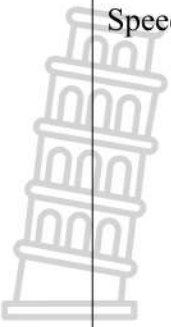
MARKS: 50

Symbol	Explanation
M	Method
MA	Method of Accuracy
CA	Consistency accuracy
MCA	Method with consistent accuracy
A	Accuracy
C	Conversions
E	Explain
S	Simplify
RT/RG/RM/RD	Read from the table / graph / map /document
SF	Correct substitution in a formula
O	Opinion
R	Rounding off
NP	No penalty for rounding off

This marking guideline consists of 6 pages

QUESTION 1			
1.1	Street map✓✓A	2A Answer (2)	L1
1.2	Greyville race course✓✓RM	2RM Answer (2)	L1
1.3	National roads✓A Municipal roads/Main roads✓A Regional roads✓A	3A correct names of roads (3)	L1
1.4	North West✓✓A	2A correct direction (2)	L1
1.5	1cm on the map represents 25 000 cm on the ground✓✓E OR 1 unit on the map represents 25 000 units in reality✓✓E	2E correct explanation (2)	L1
2.1	Strip chart/map✓✓A	2A Answer (2)	L1
2.2	964km✓✓RM	2A Correct distance (2)	L1
2.3	Distance = (259km - 135km)✓MA + 69km✓M = 124 + 69 = 193km✓A OR Distance = (829km - 705km) ✓MA+ 69km✓M = 124 + 69	1MA Subtracting correct values 1M add 69km 1A Answer 1MA Subtract correct values 1M add 69km	L2

	 = 193km✓ A	1A Answer (3)	
2.4.1	Distance = 14km + 36km + 201km✓ MA = 251km✓ A Name of the road = R61✓ RM	1MA adding correct values 1A Answer 1RM reading from map (3)	L2
2.4.2	 Time = $\frac{\text{distance}}{\text{speed}}$ $\frac{251\text{km}}{110\text{km/h}}$ ✓ SF = 2,28hours✓ S = 2 hours 17 minutes✓ A Arrival time in Port St Johns = 15:15 + 02:17 = 17:32✓ A	CA from 2.4.1 1SF correct substitution in formula 1S Simplification 1A Answer 1A Answer (4)	L3
2.4.3	Drive for 66km; turn left onto the N2; ✓E drive for 38km; turn right onto the N6. ✓E Drive for 67km to Stutterheim then 108km to Queenstown and then 163km to Aliwal North.✓E OR Drive for 66km until you reach the N2; Drive for another 66km on the N2; Turn left onto the R63 and drive for 38km until you reach the N6. Turn right onto the N6. Drive for 1km to Stutterheim; then 108km to Queenstown and 163km to Aliwal North.	1E 66km; left onto N2 1E 38km; right onto N6 1E 67km Stutterheim, 108km Queenstown, 163km Aliwal North (3)	L2

3.1	 $\text{Speed} = \frac{\text{distance}}{\text{speed}}$ $= \frac{430,6\text{km}}{5\text{ hour } 36\text{minutes}} \checkmark\text{SF}$ $= \frac{430,6\text{km}}{5,6\text{hours}} \checkmark\text{C}$ $= 76,785... \checkmark\text{S}$ $= 77\text{km/h} \checkmark\text{R}$	1SF correct substitution 1C conversion to hours 1S simplification 1R correct rounding (4)	L3
3.2	Amount of petrol for a single trip: 11km : 1litre 430,6km : ? $430,6 \div 11 \times 1 \checkmark\text{M}$ $= 39,15 \text{ litres} \checkmark\text{A}$ Amount of petrol needed for a return trip: $39,15 \times 2$ $= 78,3 \text{ litres} \checkmark\text{MCA}$ Cost for the petrol: R21,35 : 1litre ? : 78,3litres $78,3 \div 1 \times 21,35$ $= \text{R}1671,71 \checkmark\text{MCA}$ Yes, his claim is correct; it will cost more than R1500,00. $\checkmark\text{O}$ OR Distance for a return trip: $430,6\text{km} \times 2$ $= 861,2\text{km} \checkmark\text{MA}$ Amount of petrol needed for a return trip:	1M divide by 11 1A Answer 1MCA multiply by 2 for a return trip 1MCA multiply by R21,35 to get the cost of the petrol 1O Conclusion (5)	L4

	11km : 1litre 861,2km : ? $861,2 \div 11 \times 1 \checkmark M$ = 78,3 litres $\checkmark A$ Cost of petrol for a return trip: R21,35 : 1litre ? : 78,3 litres $78,3 \div 1 \times 21,35$ = R1671,71 $\checkmark MCA$ Yes his claim is correct; it will cost more than R1500 ,00. $\checkmark O$		
3.3	2,6km : 100km $\checkmark M$ 8,7cm : ? $8,7 \div 2,6 \times 100 \checkmark M$ = 334,62km $\checkmark CA$ Difference in distance : $334,6km - 266,6km$ = 68km $\checkmark MCA$ Mr Thwala's brother is correct with his claim. The distance is 68km further. $\checkmark O$	1M correct bar scale 1M divide by 2,6 and multiply by 100 1CA Answer 1MCA difference between the two distances 1O Conclusion (5)	L4
4.1	$39km - 27km \checkmark MA$ = 12km $\checkmark A$	1MA subtracting correct values 1A answer (2)	L2

4.2	08:45 - 05:00 ✓ M = 3 hours 45 minutes = 3,75 hours ✓ A	1M subtracting the correct times 1A answer in hours (2)	L2
4.3	Distance from start to Python Park : 42,2km – 21km 21,2km Speed = $\frac{\text{distance}}{\text{time}}$ = $\frac{21,2k}{3,75\text{hours}}$ ✓ SF = 5,65km/h ✓ CA	1SF correct substitution in formula 1CA Answer (2)	L2
4.4	05:00 + 7:28 ✓ MA = 12:28 ✓ A	1MA adding correct times 1A Answer (2)	L2



School : _____

Type of task _____

Gert Sibande District

Grade

Maps

:

12

MARKS : 50

				5
				4
				3
				4
				5
				5
				2
				2
				2
				2

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