KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY P2

JUNE EXAMINATION

2025

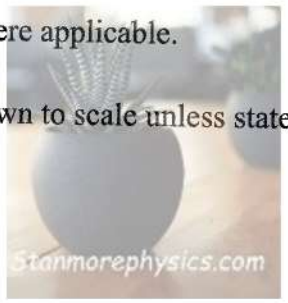
MARKS: 75

TIME: $1\frac{1}{2}$ hours

This question paper consists of 10 pages.

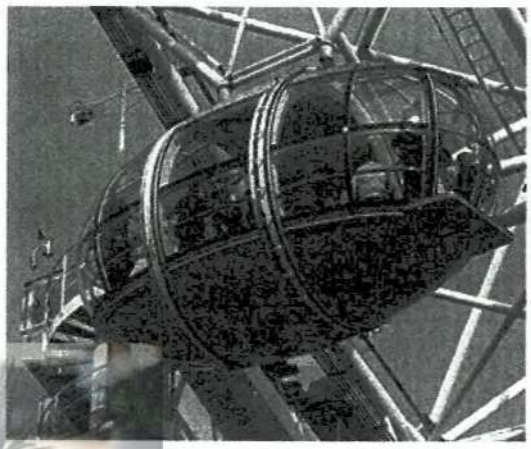
INSTRUCTIONS AND INFORMATION

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 off, ALL the final answers appropriately according to the given context, unless stated otherwise.
7. Indicate units of measurement, where applicable.
8. Diagrams are NOT necessarily drawn to scale unless stated otherwise.
9. Write neatly and legibly.



QUESTION 1

1.1 The London eye has 32 passenger capsules, each capsule can take up to 18 people. The diameter of the wheel is 120 metres (394 feet).

PICTURE OF THE WHEEL	PICTURE OF THE CAPSULE
	

[source: https://en.wikipedia.org/wiki/London_Eye]

Study the information above and answer the questions that follow.

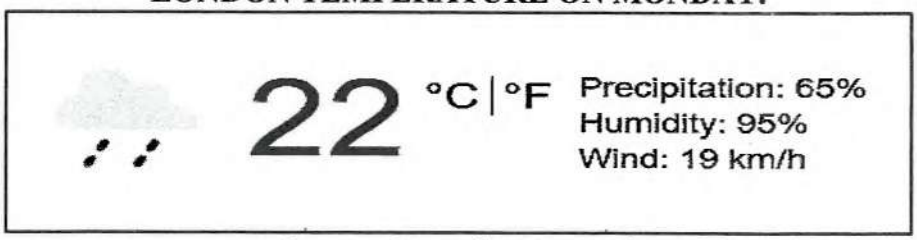
1.1.1 Determine the maximum number of passengers that can board at any one time on the London eye. (2)

1.1.2 Define the term *diameter* in the given context. (2)

1.1.3 Write the conversion factor using the diameter in the form of 1 foot: …. metres (2)

1.1.4 One of the passengers recorded the temperature as shown in the picture below.

LONDON TEMPERATURE ON MONDAY.

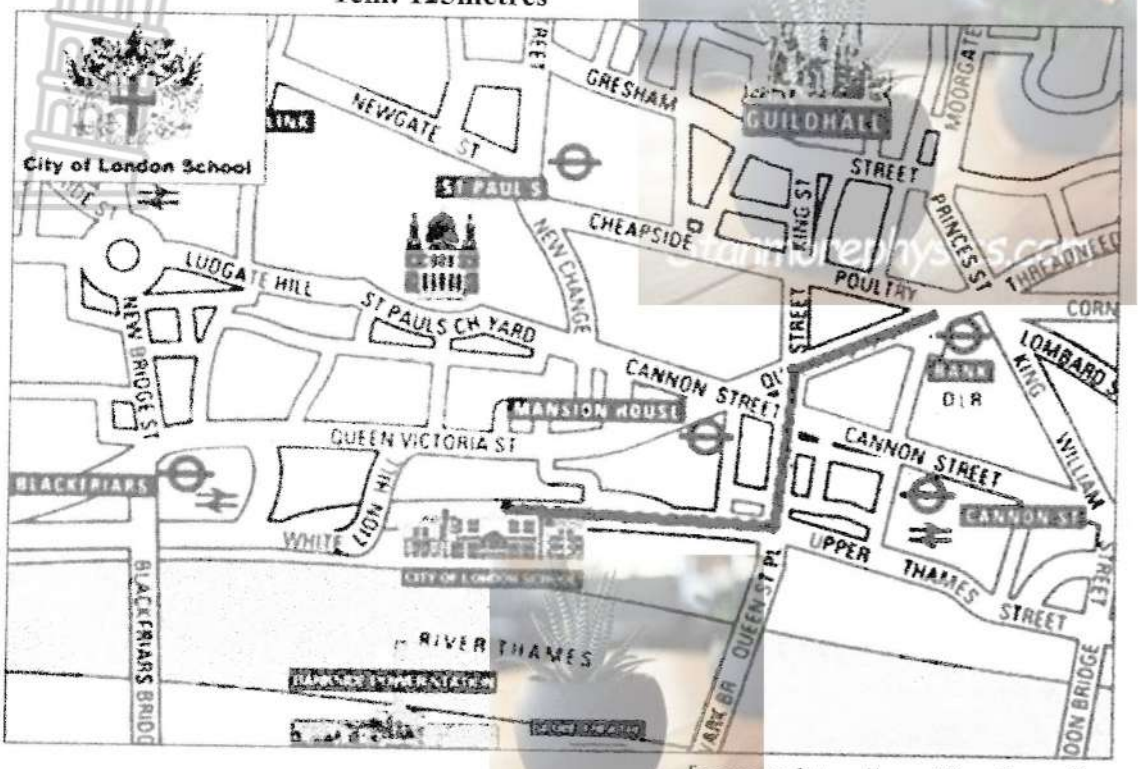


[source: https://www.google.com/search?q=temperature]

Determine the probability as a percentage of rain in London on a Monday. (2)

1.2 Below is the map of the surroundings for city of London school drawn to a scale of :

1cm: 125metres



[source: https://en.wikipedia.org]

NOTE: The route map from City of London school to the bank is shown by a bold line.

Use the map and the scale above to answer the following questions.

1.2.1 Measure the map distance from city of London school to the bank by road in cm. (3)

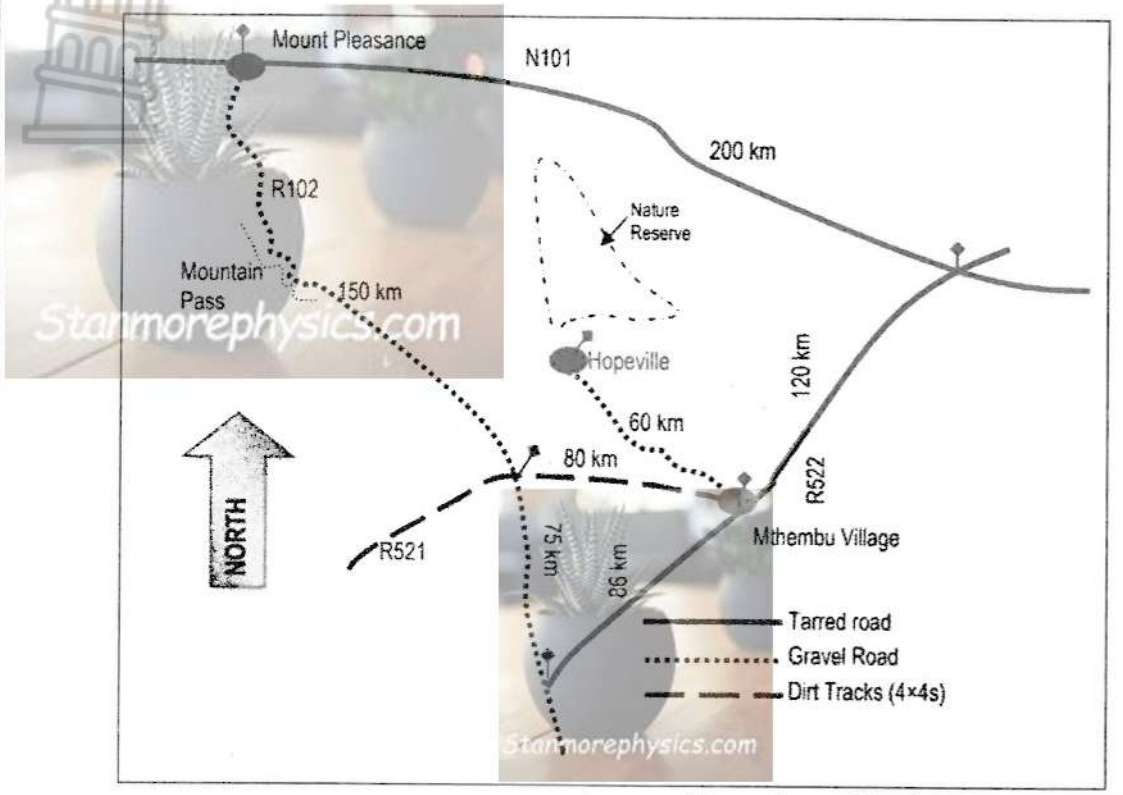
1.2.2 The distance from St Paul to Cannon Street is 8cm on the map. Determine the actual in metres between the two places. (2)

1.2.3 The walking distance from city of London guildhall to St Paul S is 1 500m. Determine how long in minutes to walk at an average pace of 75m per minute. (2)
You may use the formula: **Distance = speed x time**

[15]

QUESTION 2

2.1 The map below shows the type of roads tourists can use to travel between major areas.



[source: https://www.livethejourney.co.za]

Study the map above and answer the questions that follow.

2.1.1 Identify the type of map shown above (2)

2.1.2 Give the general direction of Mountain Pass from Mthembu village. (2)

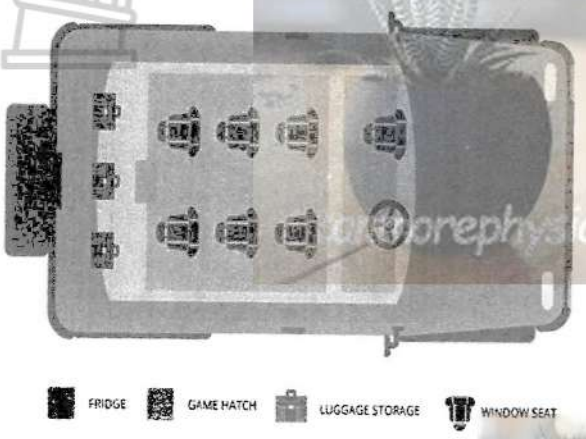
2.1.3 Calculate the time in hours and minutes taken by the car to travel from Mount Pleasance to Mthembu village via N101 at an average speed of 100km/h.

You may use the formula: $\textbf{Time} = \frac{Distance}{Time}$

(4)

2.1.4 The map distance from Mount Pleasance and the intersection of R521 and R102 is 2,5cm. Use the actual distance to determine the scale used to draw the map in the form of **1 : ...** (3)

2.2 Nalesh family intends to visit the Nature reserve. The family decides to hire a seven-seater safari vehicle. The seating plan and the picture of the safari vehicle is shown below.

SEATING PLAN OF A SAFARI VEHICLE	PICTURE OF SAFARI VEHICLE
	

[source: https://realmafricasafaris.com/]

NOTE: The vehicle has electrical charging ports and power supply.

Study the seating plan and the information above to answer the questions that follow.

2.2.1 Give ONE valid reason for a safari vehicle to have window seats. (2)

2.2.2 Nalesh puts eight different types of drinks into a fridge in the vehicle, each drink is tagged with a sticker from one to eight. Write only a word next to the question.

Choose the correct word in the box below to complete the sentence that follow:

Likely, Impossible, Certain, Even; Unlikely

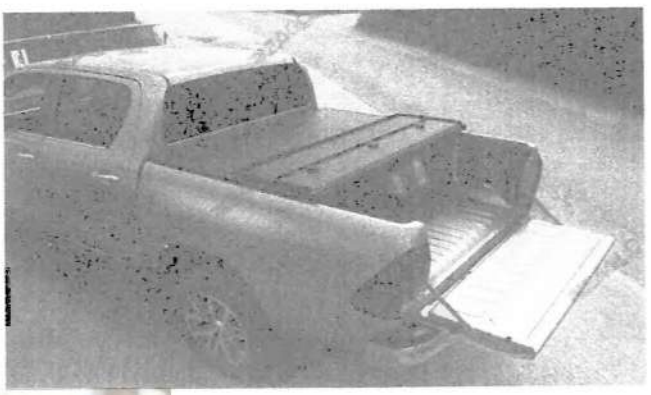
It is _____ that he will pick a drink with a number less than nine. (2)

2.2.3 Suggest ONE possible reason for a safari vehicle to have a power supply and charging ports. (2)

[17]

QUESTION 3

3.1 Mrs Glen recently purchased a vehicle. Below are the dimensions of the loading bin of the vehicle. She intends to cover the bin with a hard tonneau cover.

PICTURE OF THE LOADING BIN	PICTURE OF THE HARD TONNEAU COVER
 Length = 1 555mm Width = 1 540mm Height = 480mm	

[source: https://toyotasantarosa.com]

Study the pictures and the information above to answer the questions that follow.

3.1.1 Calculate the volume of the loading bin
You may use the formula:
Volume of a rectangular prism = length × width × height (3)

3.1.2 Convert the volume of the bin to cubic metres.
NOTE: **$1m^3 = 1\ 000\ 000\ 000mm^3$** (2)

3.1.3 Give TWO possible reasons why Mrs Glen chose to fit the hard tonneau cover on the loading bin of the bakkie. (4)

3.1.4 Mrs Glen's bakkie has a fuel consumption of 9,2litres per 100km travelled.
Determine the number of kilometres rounded off to **ONE decimal** place the bakkie can travel with 80 litres of fuel. (3)

3.2 Mrs Glen has a cylindrical gas tank placed on a rectangular stand.

PICTURE OF THE TANK

DIMENSIONS OF THE TANK

Diameter =1 400 mm
Length = 12 993 mm

WARNING: **FLAMMABLE**
NO SMOKING

[source: https//google.com/images]

Study the diagram and information above to answer the questions that follow.

3.2.1 Show that the radius of the gas tank is 0,7 metres. (2)

3.2.2 Calculate the capacity of the tank to the nearest gallon.
You may use the formula:
Volume = = $3,142 \times r^2 \times length$

Note: 0,001 m ^{3} = 1 litre = 0,264 gallons (6)

3.2.3 Explain why the tank has a visible warning sticker outside of the tank. (2)

3.2.4 The tank has a rectangular stand with four support legs. Give a possible reason for the placement of four support legs. (2)

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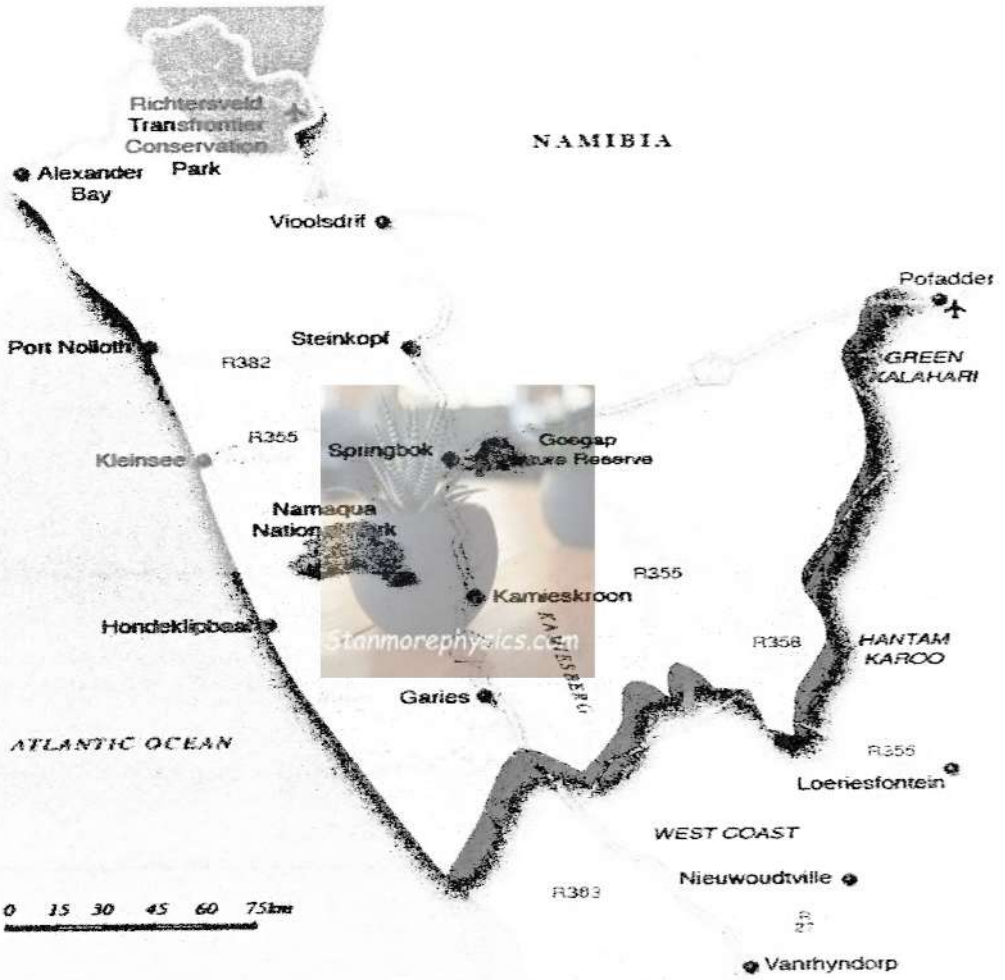
QUESTION 4

4.1 Dr Yatra intends to visit Namaqua National Park from Loeriesfontein. He travels via Vanrhyndrop. The map below shows routes to Namaqua National Park.



[source: https://www.nps.gov/blri/planyourvisit]

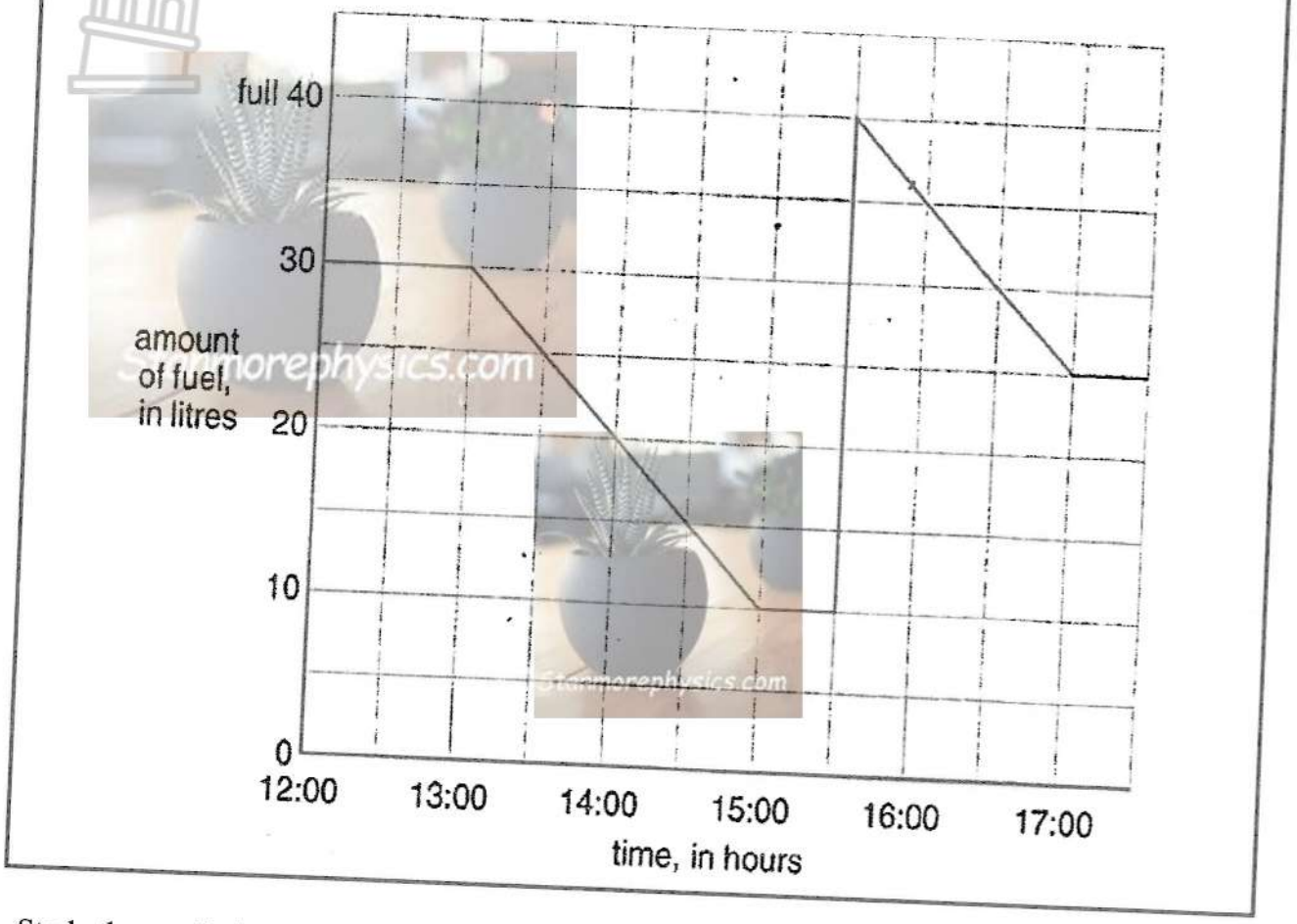
Study the map above and answer the questions that follow.

4.1.1 Identify the type of scale used on the map above. (2)

4.1.2 Give ONE possible reason why Dr Yatra is avoiding the route using regional road R355 to the national park. (2)

4.1.3 Use the scale on the map to determine the distance in km from Pofader to Springbok using N14. Give your answer rounded off to **ONE decimal** place. (4)

4.2 The graph below shows the amount of fuel in Dr Yatra's vehicle tank when he started the journey.



Study the graph above and answer the questions that follow.

4.2.1 Write down the time at which he began his trip. (2)

4.2.2 Determine the number of litres of fuel he had used when he made his first stop. (2)

4.2.3 Calculate the total number of litres of fuel for his trip. (3)

4.2.4 Dr Yatra van safely carries a maximum load of 920kg. He wants to load 30 bags of potatoes and 20 bags of carrots with a mass of 25kg and 7,5kg respectively.

Verify with calculations whether the van can take the entire load in a single trip. (4)

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TOTAL: 75 MARKS

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MATHEMATICAL LITERACY P2

COMMON TEST

JUNE 2025

MARKING GUIDELINE

MARKS: 75

SYMBOL	EXPLANATION
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy (Answer)
C	Conversion
S	Simplification
RT/RG/RD	Reading from a table/ graph/ diagram
NPR	No penalty for units/rounding
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example
J	Justification
R	Rounding off/
F	deriving a formula
E	Explanation
U	Units
AO	Answer only full marks

This marking guideline consists of 6 pages.

NOTE:

- *If a learner answers a question TWICE, only mark the FIRST attempt.*
- *If a learner has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.*
- *Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.*
- *If the learner presents extra solution when reading from the graph, table, layout plan and map, then penalise for every extra item presented.*
- *Rounding is an independent mark.*
- *General principle of making, if the candidate makes one mistake one mark is deducted.*
- *A conclusion mark can only be given if relevant calculations precedes it.*
- *No penalty for rounding (NPR) if the first decimal is correct.*

QUESTION 1 [15] ANSWER ONLY FULL MARKS			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
1.1.1	No of passengers = 32 ×18 ✓MA =576✓A	1MA multiplying 32 by 18 1A answer (2)	M L1 E
1.1.2	Diameter is two times the radius of the London Eye✓✓O **OR** The distance from circumference through the centre to the other side of the circumference of the London eye. ✓✓O	2O explanation (2)	M L1 E
1.1.3	1 foot: 120m 394✓MA 1 foot: 0,3045..m✓A	1MA dividing by 394 both sides 1A answer **NPR** (2)	M L1 E
1.1.4	65%✓✓RT	2RT correct percentage (2)	P L1 E
1.2.1	Map distance = 3,7cm + 2,1cm +2,1cm ✓A ✓MA = 7,9cm✓A	1A three correct measured lengths 1MA adding correct values 1A answer **±0,1cm/1mm** (3)	MP L1 M
1.2.2	Actual distance = 8cm ×125 metres✓MA =1 000 metres✓A	1MA multiplying by scale 1A answer (2)	MP L1 E
1.2.3	Time = 1500m✓SF 75m/min =20 minutes✓A	1SF substituting correct values 1A answer (2)	MP L1 M
			[15]

QUESTION 2[17]			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
2.1.1	Road map✓✓A	2A, answer **Accept Route map** (2)	MP L2 E
2.1.2	North West (NW) ✓✓A	2A, answer (2)	MP L2 E
2.1.3	Distance = 200km +120km =320km✓A Time = 320km✓SF 100km/h =3,2hrs✓S =3hrs 12min✓C	 1A distance 1SF correct substitution 1S simplification 1C time in hours and minutes (4)	MP L3 D
2.1.4	2,5cm :150 km ×100 000 ✓C 2,5cm : 15 000 000cm 2,5cm 2,5cm ✓MA 1: 6 000 000 ✓CA **OR** 2,5 cm : 150×60 ✓MA 1cm : 60km 1cm : 60×100 000 ✓C 1 : 60 000 ✓CA	1C conversion 1MA dividing by map length 1CA answer 1MA multiplying by 60 1C conversion 1CA answer (3)	MP L3 M
2.2.1	For the full view on the game drive✓✓O	2O opinion (2)	MP L4 D
2.2.2	Certain✓✓A	2A answer (2)	P L1 E
2.2.3	For passengers to charge their electronic devices✓✓O **OR** To plug the vehicle fridge ✓✓O **OR** Safety and communication ✓✓O	2O opinion (2)	MP L4 D
			[17]

QUESTION 3 [24]			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
3.1.1	Volume = 1 555mm ×1 540mm× 480mm ✓SF = 1 149 456 000 mm^3✓A ✓U	1SF substitution in a formula 1A answer 1U units (3)	M L2 E
3.1.2	Volume = $\frac{1\ 149\ 456\ 000mm^3}{1\ 000\ 000\ 000}$✓C =1,149456$m^3$✓CA **OR** Volume = $\frac{1\ 555mm}{1\ 000} \times \frac{1\ 540mm}{1\ 000} \times \frac{480mm}{1000}$✓C =1,555m × 1,54m ×0,48m =1,149456m^3✓CA	**CA from 3.1.1** 1C conversion 1CA answer **OR** 1C conversion 1CA answer **NPR** (2)	M L2 M
3.1.3	• To protect the loading bin of the bakkie from rust/corrosion/rainwater ✓✓O • Safety and protection of items in the loading bin ✓✓O **OR** • Increase the loading bin lifespan • Fuel efficiency • Vehicle modification	2O 1st opinion 2O 2nd opinion (4)	M L4 D
3.1.4	Distance = $\frac{80l}{9,2l}$ ×100km✓MA =869,56✓CA =869,6km✓R	1MA multiplying by100 and dividing by 9,2 1CA answer 1R rounding (3)	M L2 M
3.2.1	Radius = $\frac{1\ 400mm}{1000}$✓C =$\frac{1,4m}{2}$✓MA =0,7m **OR** Radius = $\frac{1400mm}{2}$✓MA =$\frac{700mm}{1000}$✓C =0,7m	1C conversion 1MA dividing diameter by 2 **OR** 1MA dividing diameter by 2 1C conversion (2)	M L2 E

QUE	SOLUTION	EXPLANATION	T&L
3.2.2	Height = 12 993mm÷ 1000 = 12,993m Volume = 3,142 ×0,7m ×0,7m ×12,993m ✓SF =20,003716294m^3✓S Capacity = $\frac{20,003716294m^3}{0,001}$✓C =20 003,76 litres✓CA Capacity = 20 003,76 ×0,264 gallons✓C =5 280,993 =5 280 gallons✓R	 1SF correct height 1S simplification 1C conversion 1CA correct capacity in litres 1C conversion 1R rounding (6)	M L3 D
3.2.3	To warn people that fire can cause an explosion✓✓O **OR** Gas inside the tank is flammable✓✓O **OR** Provide warning for potential danger ✓✓O **OR** Safety measures ✓✓O	2O Opinion (2)	M L4 E
3.2.4	To prevent the tank from rolling/stability✓✓O **OR** To avoid contact with the ground floor. ✓✓O **OR** To prevent corrosion✓✓O **OR** To prevent damages on the tank✓✓O	2O opinion (2)	M L4 D
			[24]

QUESTION 4 [19]			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
4.1.1	Bar/Line/Linear/Graphic/Ruler scale ✓✓A	2A correct scale (2)	MP L1 E
4.1.2	The regional road has fewer lanes, which leads to slower traffic movement✓✓O **OR** Usually, regional roads have road works/ unpaved road✓✓O	2O opinion (2)	MP L4 D
4.1.3	✓A 3,3cm :75km ✓A Distance = 6,8cm × 75km ✓MA 3,3cm =154,545 =154,5km✓R	1A bar scale measurement 1A measured length 1MA concept of scale 1R answer (4)	MP L2 M
4.2.1	13:00✓✓RT **OR** 1:00 pm✓✓RT **OR** One o'clock in the afternoon✓✓RT	2RT correct time (2)	M L2 E
4.2.2	No of litres = 30 litres – 10 litres✓MA =20 litres`✓A	1MA subtracting correct litres 1A answer **AO** (2)	M L2 M
4.2.3	✓MCA Total fuel = 20 litres + 15 litres ✓RT = 35 litres✓CA	**CA from 4.2.2** 1MCA adding litres 1RT adding 15 litres 1CA answer (3)	M L3 E
4.2.4	✓MA Total mass = (25kg ×30) + (7,5kg ×20) ✓MA =750kg +150kg =900kg ✓CA It will take all bags in one load. ✓J	1MA multiplying by mass 1MA adding both mass 1CA answer 1J justification. **32,5kg with justification MAX 2marks** (4)	M L4 M
			[19]
		TOTAL MARKS:	**75**