



education

Department of
Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION

GRADE 12

MATHEMATICAL LITERACY P2

SEPTEMBER 2026

MARKS: 150

TIME: 3 HOURS

**This question paper consists of 13 pages and
a SPECIAL ANSWER BOOK of 19 pages.**

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions.
2. Answer ALL the questions in the SPECIAL ANSWER BOOK provided.
3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
4. Show ALL calculations clearly.
5. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
8. Write neatly and legibly.

QUESTION 1

- 1.1 Choose a description/definition in COLUMN B that matches the concept in COLUMN A. Write only the letter (A–J) next to the question numbers (1.1.1 to 1.1.5) in the ANSWER BOOK, e.g., 1.1.6 K.

COLUMN A	COLUMN B
1.1.1 Metric system	A The boundary that surrounds a circular shape.
1.1.2 Distance	B The result of speed, in km/h, divided by the time, in hours.
1.1.3 Kitchen Scale	C A system measuring in inches, gallons and pounds.
1.1.4 One hour	D The instrument used to measure a person's weight.
1.1.5 Circumference	E Time measurement equivalent to six hundred seconds.
	F A measuring system using metres, litres, and kilograms.
	G The instrument used to measure the mass of cooking and baking ingredients.
	H The line from one end of a circle to the other end.
	I Time measurement equivalent to three thousand six hundred seconds.
	J The result of speed, in km/h, multiplied by the time, in hours.

(5 x 2) (10)

- 1.2 ANNEXURE A in the ANSWER BOOK shows a map of part of the Kruger National Park.

Use the map on ANNEXURE A to answer the questions that follow.

- 1.2.1 Explain the meaning of the phrase *not to scale* as it appears on the map. (2)
- 1.2.2 Write down the name of the bridge found on the map. (2)
- 1.2.3 Give ONE possible reason why there are gates at the Kruger National Park. (2)
- 1.2.4 Choose the word from those given in brackets to make the statement below true.
- The road linking Phalaborwa gate and Letaba main camp is a (main/gravel) road. (2)

1.2.5 Reneilwe stated that there is a petrol station at every main camp.

Is the statement TRUE or FALSE?

(2)

1.3 Below is the floor plan of one of the rondavels used to accommodate visitors at the Kruger National Park.



[Source: www.pinterest.com]

Use the information above to answer the questions that follow.

1.3.1 Write down the shape of the base of the rondavel on the plan.

(2)

1.3.2 The diameter of the rondavel is 8,5 m. Calculate, in cm, the radius of the rondavel.

(3)

1.3.3 Write down the total number of doors shown on the plan.

(2)

1.3.4 Choose the correct explanation for the term *floor plan* from the two explanations given below. Write only the letter **P** or **Q** next to the question number.

P A plan that shows how items are arranged in a certain space.

Q A plan that shows the layout of a building as seen from above.

(2)

[29]

QUESTION 2

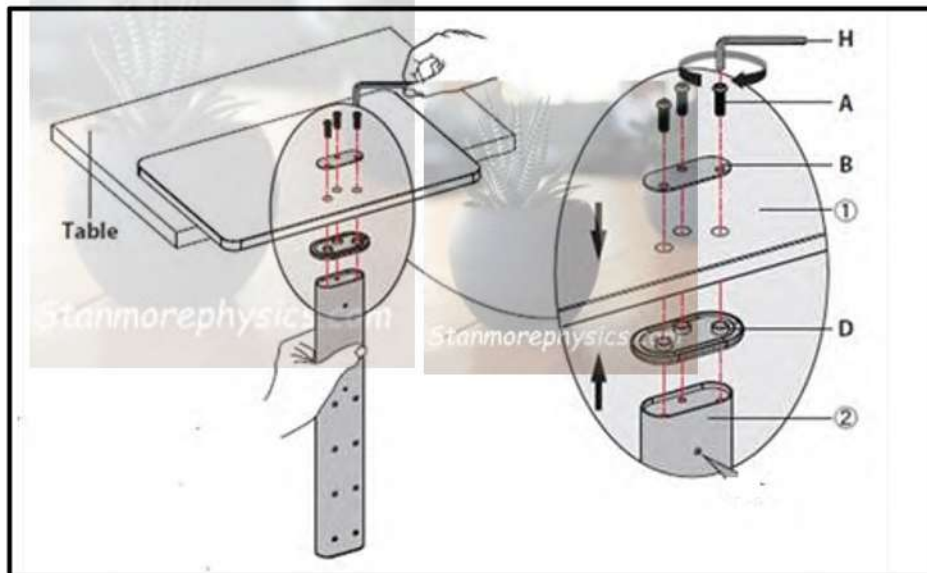
2.1 Lebogang bought an adjustable rolling television (TV) stand so that he can move it and watch TV in different rooms of his house.

ANNEXURE B in the ANSWER BOOK shows the components needed to assemble the TV stand.

Use the information above and ANNEXURE B to answer the questions that follow.

2.1.1 Write down the number of components that are needed as a single pair. (2)

2.1.2 Step 1 of assembling the TV stand is shown in the picture below. The letters in this picture correspond with the letters used for components shown in ANNEXURE B.



[Adapted from www.images.thdstatic.com]

(a) Write down the function of the component indicated by letter **H**. (2)

(b) Name the components **A**, **B** and **D** used in this step. (3)

2.1.3 The ANSWER BOOK includes a table with pictures and instructions that may not necessarily correspond with each other.

Choose the correct instruction from COLUMN B that matches the picture in COLUMN A. Write down only the correct number (1 to 3) and the corresponding letter (A–C) in the ANSWER BOOK, for example, 1 D. (3)

- 2.2 Kele owns a catering company and sells fruit salad as one of her products. She decided to test a new fruit mixture by asking a group of people to assess whether it would sell.

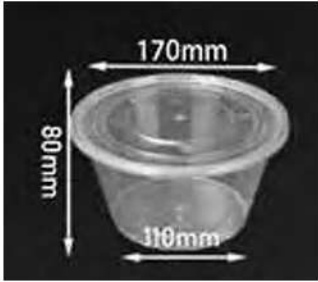
The table below shows the information she collected.

TABLE 1: OUTCOMES OF INFORMATION COLLECTED

		WOULD BUY THE NEW MIXTURE	WOULD NOT BUY THE NEW MIXTURE	TOTAL
Gender	Male	14	a	21
	Female	11	8	19
	TOTAL	b	15	c

Use the information above to answer the questions that follow.

- 2.2.1 Calculate the missing values **a**, **b** and **c**. (3)
- 2.2.2 Determine, as a decimal, the probability that a randomly selected person who would not buy the new mixture is female. (3)
- 2.2.3 Based on the results collected, would you advise Kele to sell the new fruit salad mixture? Explain your answer. (2)
- 2.3 Kele packs the fruit salad in bowls as shown in picture 1 below. She then packs the bowls into a box for delivery (as shown in picture 2).

PICTURE 1: UPRIGHT SALAD BOWL	PICTURE 2: DELIVERY BOX
	

[Source: www.amazon.eg/ad/packmojo.com]

Determine the number of fruit salad bowls Kele could pack in the delivery box. The bowls must be packed as shown in the picture (upright) into the delivery box with the indicated side on top.

(7)
[25]

QUESTION 3

- 3.1 Reinette decided to buy an outdoor fire pit to keep warm during the winter. The fire pit weighs 74 pounds. The fire pit has a circular stand to protect the frame. The pictures below show the outdoor fire pit and the stand, with dimensions.



[Source: www.firepit.co.uk]

NOTE:

1 kg = 2,2046 pounds

Use the information above to answer the questions that follow.

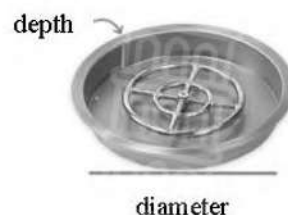
- 3.1.1 Calculate the circumference of the bottom part of the fire pit.

Use the formula:

$$\text{Circumference of a circle} = 3,142 \times \text{diameter} \quad (3)$$

- 3.1.2 Convert the fire pit's weight to kg. Round your answer to two decimal places. (2)

- 3.1.3 The circular burner pan of the fire pit has a diameter of 32 cm, and a depth of 0,4 m. Calculate, in cm^3 , the volume of the burner pan.



Use the formula:

$$\text{Volume of the burner pan} = 3,142 \times \text{radius}^2 \times \text{depth} \quad (4)$$

- 3.1.4 The bottom part of the fire pit will be placed in the centre of the stand. Calculate the length left on each side of the stand. Give your answer in mm. (3)



- 3.1.5 There are different lava rocks available for the fire pit. Reinette bought basalt and granite rocks for their ability to withstand temperatures up to 2 500 °F.

Convert 2 500 °F to degrees Celsius.

You may use the formula:

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

- 3.2 To keep a healthy lifestyle, Reinette joined a team of ladies who walk daily as part of the exercise programme. The table below shows the time they spend walking per day for a week.

TABLE 2: WALKING PLAN FOR A WEEK

Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
35 min	50 min	50 min	30 min	30 min	45 min	Rest

Use the information above to answer the questions that follow.

- 3.2.1 Calculate the total time, in hours, that they walk in a week. (3)

- 3.2.2 Write down ONE possible reason why the team is not walking on a Sunday. (2)

- 3.2.3 According to **one2onenutrition.co.za**, a person who does light exercise of less than one hour per day requires between 3 and 5 grams of carbohydrates per kilogram of body mass per meal.

Calculate the minimum number of grams of carbohydrates that Reinette requires per meal if she weighs 66 kg. (3)

- 3.2.4 It is also recommended that people drink enough water every day.

Reinette claimed that drinking 2 litres of water per day, she would meet the recommended water intake.

The formula to calculate the required amount of water a person should drink per day is as follows:

$$\text{Quantity of water per day (in litres)} = \frac{\text{weight (in kg)}}{25} - \frac{3}{10}$$

Is Reinette correct? Verify your answer with calculations. (3)

- 3.3 The team recorded their height and weight to calculate their BMI (Body Mass Index). TABLE 3 shows their records, and TABLE 4 shows the BMI categories (weight status) for adults.

TABLE 3: RECORDS OF WEIGHT AND HEIGHT

	REINETTE	LEONEDA	WESI
Height	146 cm	145 cm	148 cm
Weight	66 kg	67 kg	62 kg

TABLE 4: BMI CATEGORIES (WEIGHT STATUS) FOR ADULTS

BMI	CATEGORY (WEIGHT STATUS)
Less than 18,5	Underweight
From 18,5 to 24,9	Normal
From 25 to 29,9	Overweight
30 or more	Obese

Use the information above to answer the questions that follow.

- 3.3.1 Wesi claimed that her weight status is normal. Show by means of calculations whether her statement is correct.

Use the formula:
$$\text{BMI} = \frac{\text{mass (in kg)}}{(\text{height in metres})^2}$$
 (5)

- 3.3.2 Leoneda's weight status is obese. What can Leoneda do to achieve a normal weight status?

(2)
[33]

QUESTION 4

- 4.1 On ANNEXURE C in the ANSWER BOOK, the floor plan of Sibusiso's house is shown. He wants to extend the house by adding a garage. The dotted lines on the FRONT of the house show the walls that will be built to construct the garage.

Use the information on ANNEXURE C to answer the questions that follow.

- 4.1.1 Write down ONE disadvantage of the scale shown on the plan. (2)

- 4.1.2 Name ONE shortcoming in the plan for the garage. Explain why this is a shortfall. (3)

- 4.1.3 Sibusiso wanted to buy a custom-made garage door. The company that designs the doors requested him to bring the actual measurements of the garage door.

Use the plan and the bar scale to calculate the actual measurement of the garage door. (6)

- 4.1.4 The ready-mix concrete company will be paid to supply the required concrete material for the garage floor area. The dimensions of the truck are given below.



Length = 8,7 m
 Height = 4 m
 Capacity = 8 cubic metres

NOTE:
 1 ton = 1 000 kg

- (a) Write down the abbreviation for cubic meter. (2)

- (b) If one cubic metre of concrete weighs 2,5 tons, calculate the weight of the concrete in the fully loaded truck in kg. (3)

- (c) The floor area of the extension will be approximately 18.8 m². Sibusiso stated that $\frac{3}{5}$ of the load of concrete in the fully loaded truck is sufficient to pour a floor 120 mm thick.

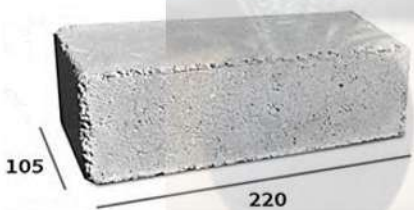
Verify with calculations whether Sibusiso is correct. (6)

- (d) Calculate the total cost of the ready-mix concrete if the company charges R1 950 per cubic metre.

NOTE: A part of a cubic metre can be bought. (2)

- 4.2 Sibusiso will also lay paving bricks at the BACK of the house as indicated with the dotted lines on the plan.

The type of paving brick, together with dimensions (in mm) and the paving pattern, is shown in the pictures below.

Picture of the paving brick	Pattern for paving
	

Use the information above and on ANNEXURE C to answer the questions that follow.

- 4.2.1 Calculate the total number of paving bricks needed for the area to be paved.

You may use the following formula:

$$\text{Area of rectangle} = \text{Length} \times \text{Width} \quad (9)$$

- 4.2.2 If one pallet carries 500 paving bricks, calculate the number of full pallets Sibusiso must buy.

(2)

[35]

QUESTION 5

- 5.1 London is the capital city of both England and the United Kingdom, with a population of eight million nine hundred and forty-five thousand three hundred and nine. Many people, including South Africans, like to visit this city for its iconic stadiums, palaces and parks.

ANNEXURE D in the ANSWER BOOK shows distances of cities in different countries from Johannesburg in South Africa.

NOTE:

1 mile = 1,609 km

Use ANNEXURE D and the information above to answer the questions that follow.

- 5.1.1 Write down the city with the shortest distance from Johannesburg. (2)
- 5.1.2 Convert the distance from Bangkok to Johannesburg to miles. (3)
- 5.1.3 Write down the population of London using numerals (numbers only). (2)

- 5.1.4 Nosipho and her two friends stay in Johannesburg. They plan to go to London for vacation. The table below shows the information about flights departing from Johannesburg.

	Prices (excluding 15% VAT)
Emirates Airways (18 hours 45 min) 1 stop at Dubai International Airport Time of departure: 14:55	R16 798 for round trip
British Airways (11 hours 10 min) Nonstop Time of departure: 7:25 p.m.	R18 210 for round trip

[Source: www.airports.co.za]

- (a) Write down the time of departure for the British Airways flight in 24-hour format. (2)
- (b) Nosipho and her two friends chose to travel with Emirates Airways because they wanted to do some shopping in Dubai. Calculate the total amount, including VAT, that they will have to pay together for their travel. (5)

- 5.2 Below is a table showing information about the Airbus used by Emirates Airways and British Airways on the respective flights.

TABLE 5: INFORMATION ABOUT AIRBUSES

	EMIRATES AIRWAYS	BRITISH AIRWAYS
Maximum number of passengers	459	470
Mass of fuel (kerosene-based fuel) in the tank	91 625 kg	113 400 kg
Maximum recommended altitude to fly	37 000 feet	35 000 feet
Maximum average speed for the Airbus	647 mph	650 mph

NOTE:

An Airbus is a type of passenger aeroplane.

mph = miles per hour

density of diesel = 0,85 kg/ℓ

1 nautical mile = 6 076 feet

Use ANNEXURE D, the information above and the information in QUESTION 5.1 to answer the questions that follow.

- 5.2.1 Malee travelled on an Emirates Airways Airbus from Bangkok to Johannesburg to meet Nosipho and her friends. She will join them on their trip to London. Malee claims that she will arrive in Johannesburg more than 1 hour and 30 minutes before the departure time of the flight to London. Her departure time from Bangkok was 03:30 am. Verify, using calculations, whether her claim is correct.

Use the formula:

$$\text{Distance} = \text{maximum average speed} \times \text{time} \quad (7)$$

- 5.2.2 Calculate the volume of the fuel for the Emirates Airways Airbus.

Use the formula:

$$\text{Volume} = \frac{\text{Mass}}{\text{Density}} \quad (3)$$

- 5.2.3 Determine, to the nearest nautical mile, the maximum recommended altitude for an Airbus from British Airways. (4)

[28]

TOTAL: 150

Preparatory Examination
Answer Book[illegible]

BOOK NUMBER		OF		BOOKS
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SUBJECT CODE	M	L	I	T	Z
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PAPER NUMBER	2
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SUBJECT NAME	MATHEMATICAL LITERACY
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[illegible]

Teacher signature: Date:

This answer book consists of 19 pages.

FOLLOW THESE INSTRUCTIONS CAREFULLY.

1. Clearly write your SURNAME and NAME(S) in the space provided.
2. Answer ALL questions in the spaces provided.
3. No pages may be torn from this answer book.
4. Read the instructions printed on your question paper carefully.
5. Candidates may not retain an answer book or remove it from the examination room.
6. Answers must be written in black/blue ink as distinctly as possible.
7. Do not write in the margins.
8. If you require additional space for your answers:
 - 8.1 Use the additional space provided at the end of the answer book.
 - 8.2 When answering a question in additional space, indicate clearly the question number in the column on the left-hand side.
9. Draw a neat line through any work that must not be marked.

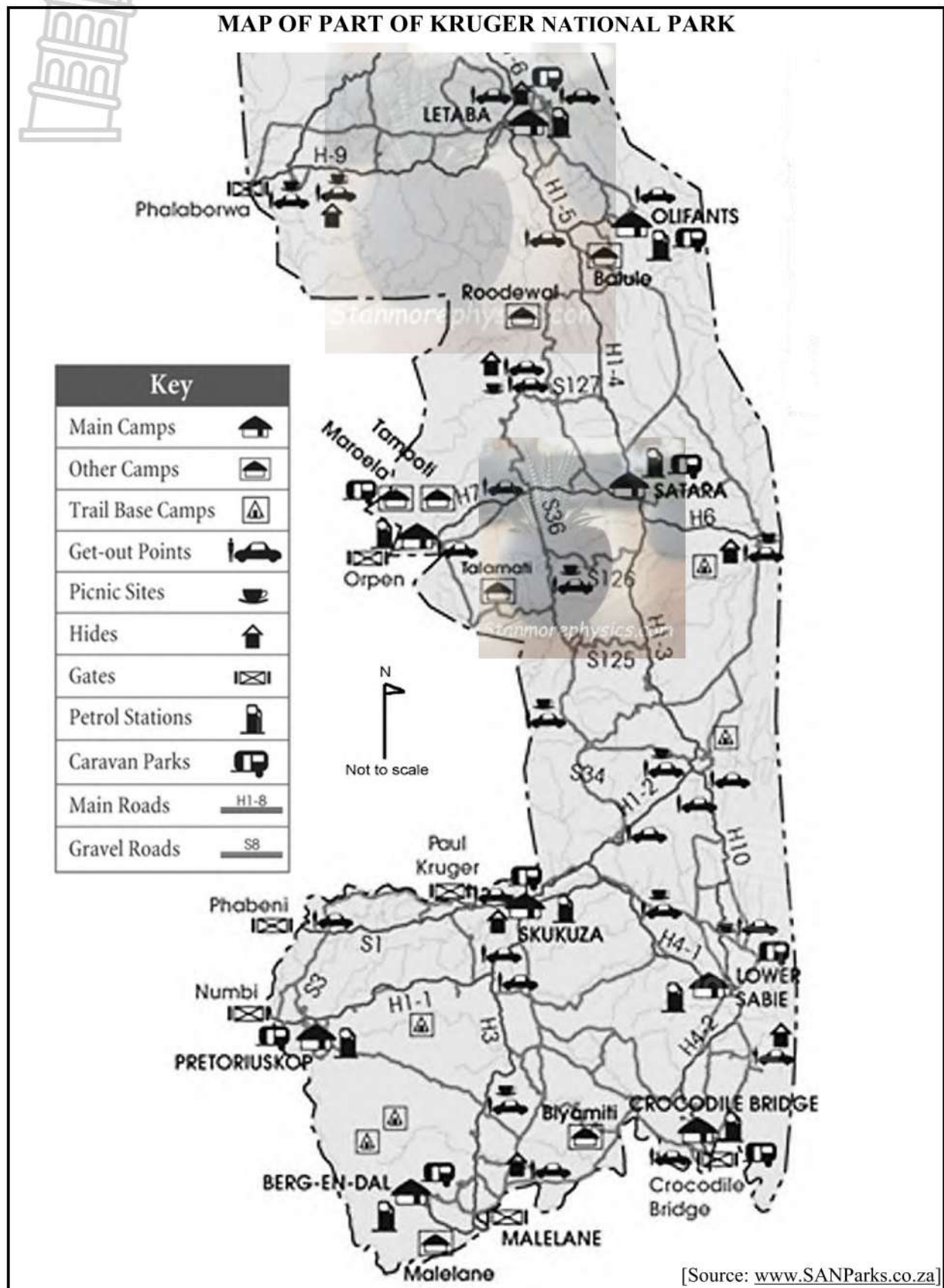
QUESTION 1

1.1	Solution	Marks
1.1.1		(2)
1.1.2		(2)
1.1.3		(2)
1.1.4		(2)
1.1.5		(2)



ANNEXURE A

QUESTION 1.2



1.2.1		
		(2)
1.2.2		
		(2)
1.2.3		
		(2)
1.2.4		
		(2)
1.2.5		
		(2)

	Solution	Marks
1.3.1		(2)
1.3.2		(3)
1.3.3		(2)
1.3.4		(2)
		[29]





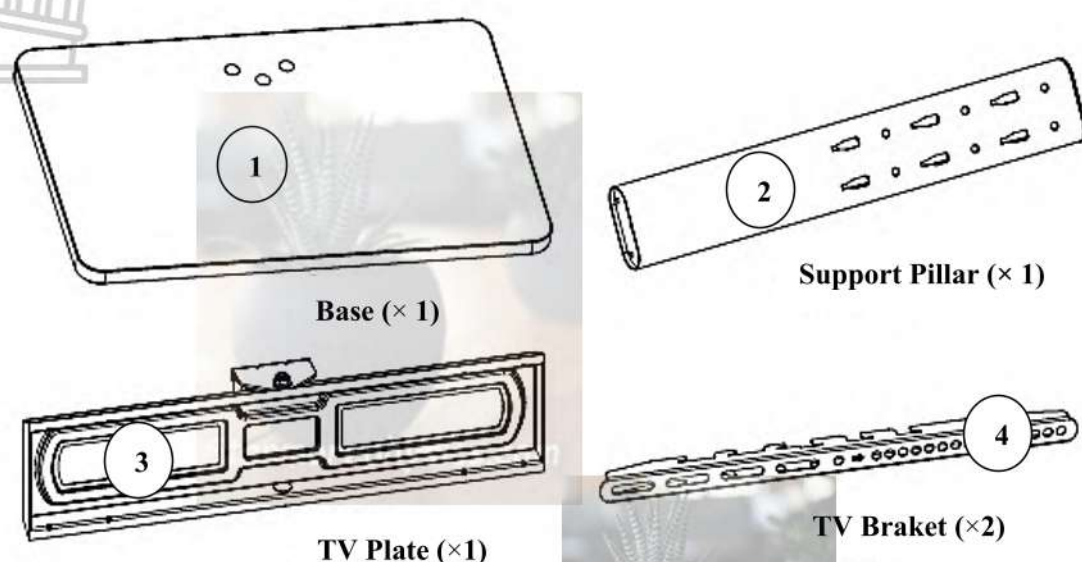
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QUESTION 2.1

ANNEXURE B

COMPONENTS NEEDED TO ASSEMBLE THE TV STAND

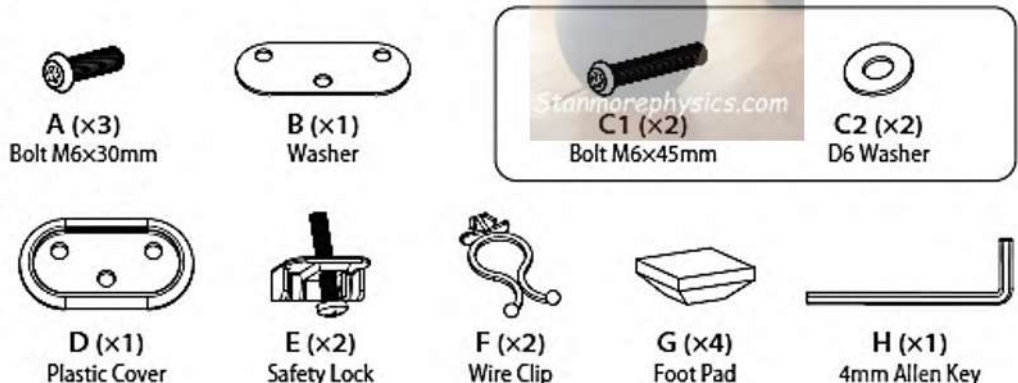


Base (× 1)

Support Pillar (× 1)

TV Plate (×1)

TV Bracket (×2)



A (×3)
Bolt M6x30mm

B (×1)
Washer

C1 (×2)
Bolt M6x45mm

C2 (×2)
D6 Washer

D (×1)
Plastic Cover

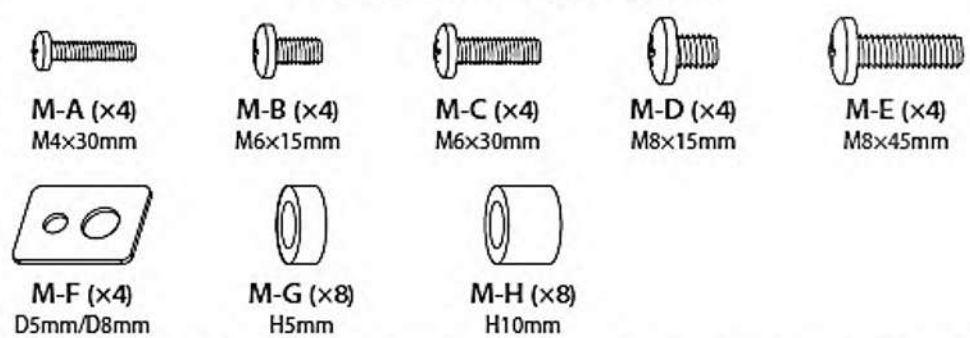
E (×2)
Safety Lock

F (×2)
Wire Clip

G (×4)
Foot Pad

H (×1)
4mm Allen Key

TV Screw / Washer / Spacer



M-A (×4)
M4x30mm

M-B (×4)
M6x15mm

M-C (×4)
M6x30mm

M-D (×4)
M8x15mm

M-E (×4)
M8x45mm

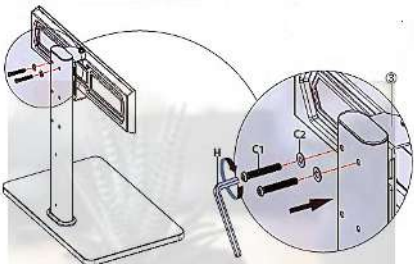
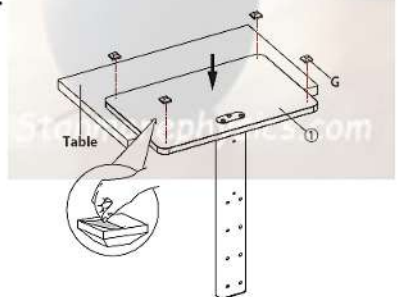
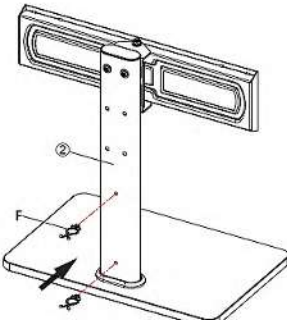
M-F (×4)
D5mm/D8mm

M-G (×8)
H5mm

M-H (×8)
H10mm

[Adapted from www.images.thdstatic.com]

2.1	Solution	Marks
2.1.1		(2)
2.1.2 (a)		
2.1.2 (b)		(3)
2.1.3		(3)

COLUMN A (PICTURE)	COLUMN B (INSTRUCTIONS)
1. 	A. Tear off plastic film of foot pads, then attach foot pads near four corners of the base bottom.
2. 	B. Attach wire clips into the holes of support pillar.
3. 	C. Connect the TV plate to support pillar by using bolts and washers, then tighten the bolts with the allen key.

2.2	Solution	Marks
2.2.1		(3)
2.2.2		(3)
2.2.3		(2)
2.3		(7)
		[25]

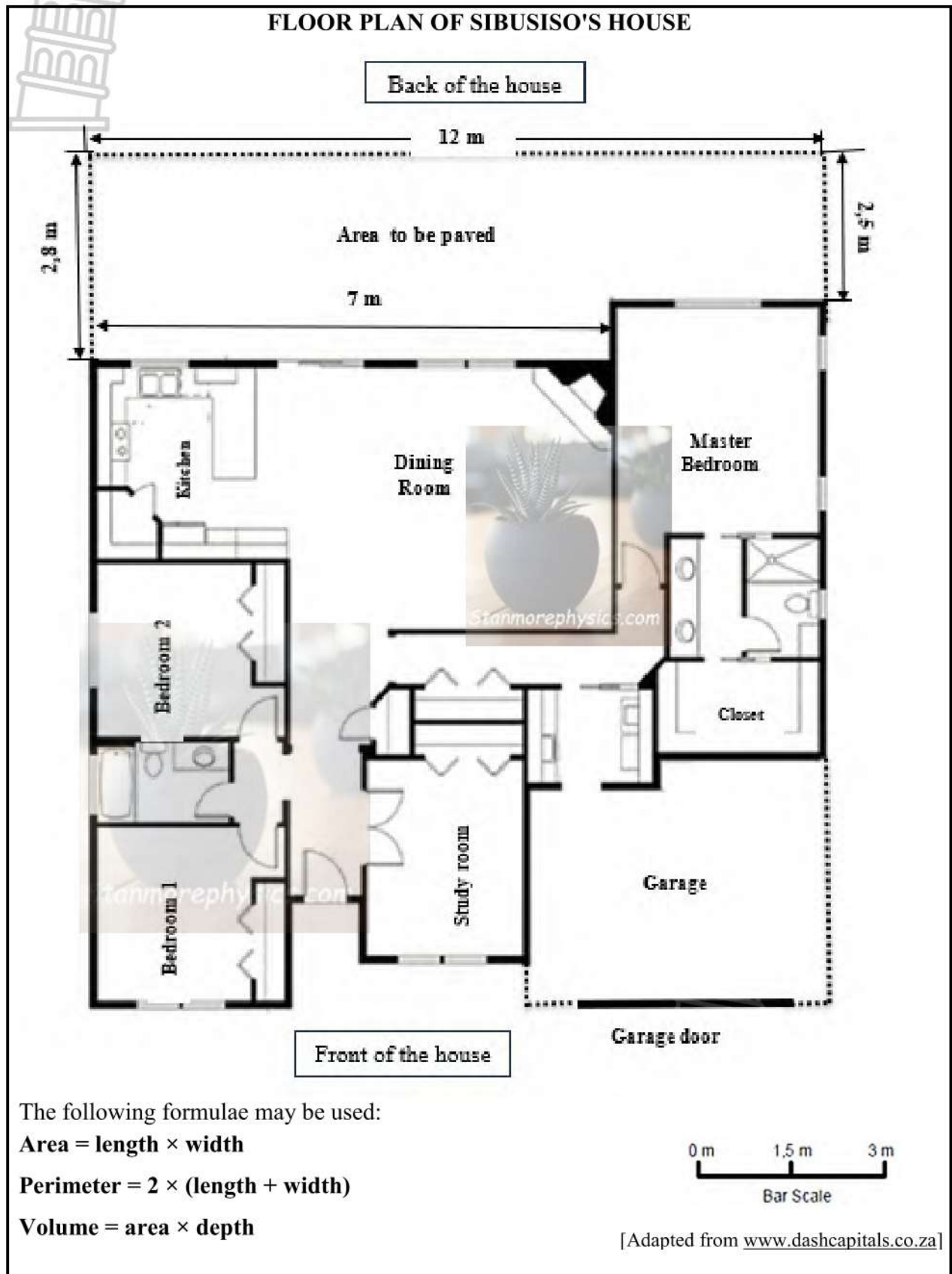
QUESTION 3

3.1	Solution	Marks
3.1.1		(3)
3.1.2		(2)
3.1.3		(4)
3.1.4		(3)
3.1.5		(3)

3.2	Solution	Marks
3.2.1		(3)
3.2.2		(2)
3.2.3		(3)
3.2.4		(3)
3.3.1		(5)
3.3.2		(2)
		[33]

QUESTION 4

ANNEXURE C

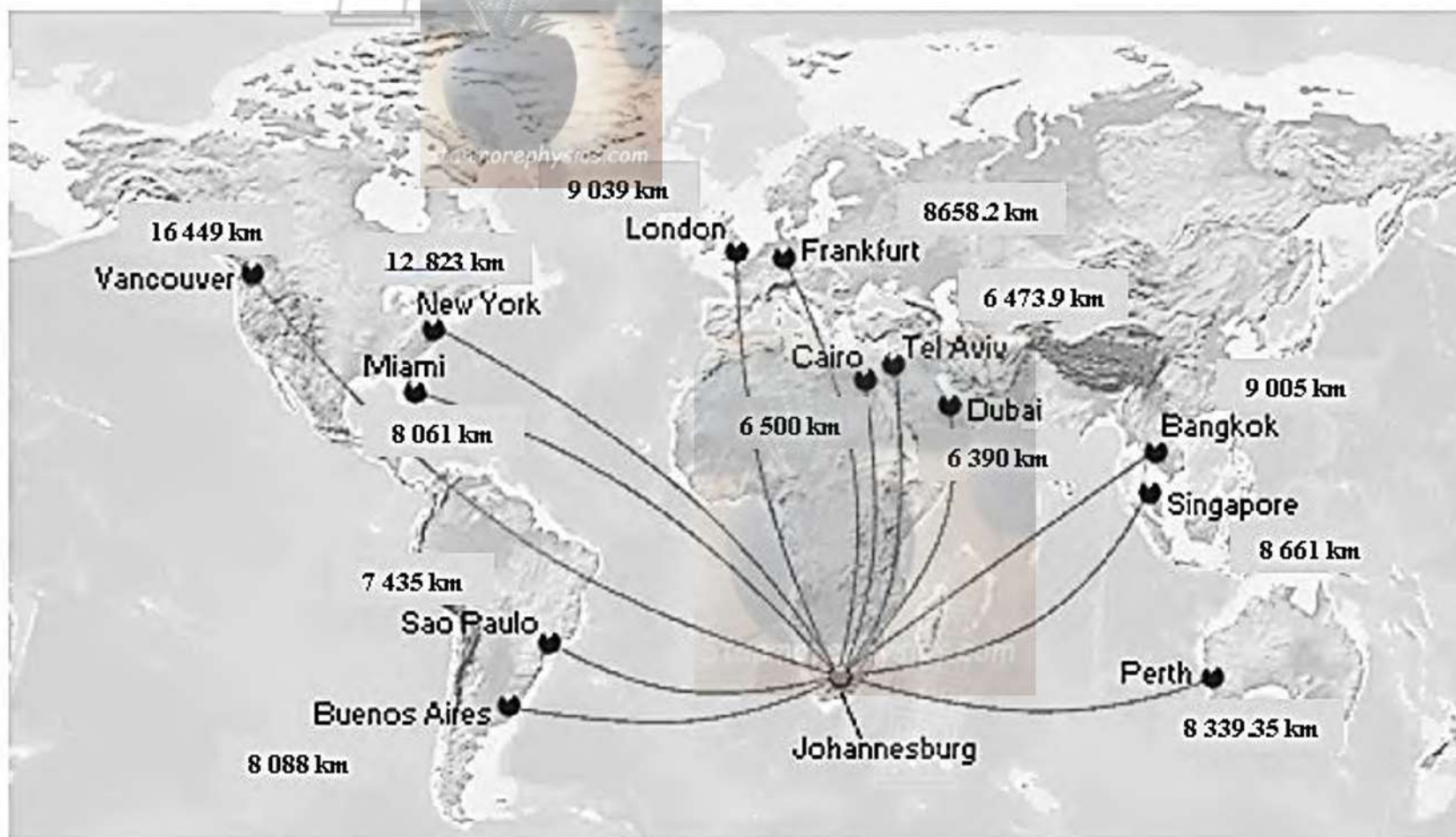


4.1	Solution	Marks
4.1.1		(2)
4.1.2		(3)
4.1.3		(6)
4.1.4 (a)		(2)
4.1.4 (b)		(3)

	Solution	Marks
4.1.4 (c)		
		(6)
4.1.4 (d)		
4.2		(2)
4.2.1		
		(9)
4.2.2		
		(2)
		[35]

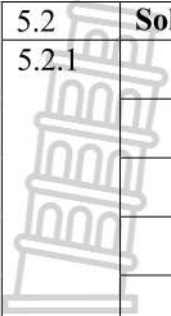
ANNEXURE D

DISTANCES BETWEEN JOHANNESBURG AND CITIES IN OTHER COUNTRIES



[Source: www.directflights.com]

5.1	Solution	Marks
5.1.1		(2)
5.1.2		(3)
5.1.3		(2)
5.1.4 (a)		(2)
5.1.4 (b)		(5)

5.2	Solution	Marks
5.2.1		(7)
5.2.2		(3)
5.2.3		(4)
		[28]

	Additional space	Marks

TOTAL: 150



education

Department of
Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION *VOORBEREIDENDE EKSAMEN*

GRADE/GRAAD 12

MATHEMATICAL LITERACY P2 *WISKUNDIGE GELETERDHEID V2*

SEPTEMBER 2026

MARKS/PUNTE: 150

MARKING GUIDELINES/NASIENRIGLYNE

Symbol/Kode	Explanation/Verduideliking
M	Method/Metode
MA	Method with accuracy/Metode met akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/a graph/document/diagram/Lees vanaf tabel/'n grafiek/dokument/diagram
SF	Correct substitution in a formula/Korrekte vervanging in 'n formule
O	Opinion/Explanation/Opinie/Verduideliking
P	Penalty, e.g. for no units, incorrect rounding off, etc./Penalisasie, bv. vir geen eenhede, verkeerde afronding ens.
R	Rounding off/Afronding
NPR	No penalty for correct rounding if the first digit after the comma is correct/Geen penalisasie vir korrekte afronding nie indien die eerste syfer na die komma korrek is nie.
NPU	No penalty for omitting unit, but wrong unit is penalised/Geen penalisering indien die eenheid uitgelos is nie, maar wel indien 'n verkeerde eenheid gebruik word.
AO	Answer only/Slegs antwoord
MCA	Method with constant accuracy/Metode met volgehoue akkuraatheid

These marking guidelines consists of 12 pages.
Hierdie nasienriglyne bestaan uit 12 bladsye.

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate 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.
- NOTE: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- As a general marking principle: If the candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only.
- Rounding is an independent mark.
- A conclusion mark can only be given if relevant calculations precede it.
- No penalty for rounding (NPR) if the first decimal is correct

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Let Wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *'n Algemene nasienbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor.*
- *Afronding tel as 'n onafhanklik punt.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevant berekening dit voorafgaan.*
- *Geen penalisering vir ronding (NPR) as die eerste desimaal korrek is nie.*

QUESTION/VRAAG 1 [29 MARKS/PUNTE]		ANSWER ONLY FULL MARKS	
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	F ✓✓A A measuring system using metres, litres and kilometres	2A correct answer (2)	M L1 E
1.1.2	J ✓✓A The results if speed, in km/h, multiplied by time I hours	2A correct answer (2)	M L1 E
1.1.3	G ✓✓A The instrument used to measure the mass of cooking and baking ingredients	2A correct answer (2)	M L1 E
1.1.4	I ✓✓A Time measurement equivalent to three thousand six hundred seconds	2A correct answer (2)	M L1 E
1.1.5	A ✓✓A The boundary that surrounds a circular shape.	2A correct answer (2)	M L1 E

1.2.1	Distances on the map cannot be used to determine the actual distance/ <i>die afstande op die kaart kan nie gebruik word om die werklike afstande te bereken nie</i> ✓✓A	2A correct explanation (2)	MP L1 D
1.2.2	Crocodile bridge/ <i>krokodilbrug</i> ✓✓A	2A name of the bridge (2)	MP L1 E
1.2.3	To manage the visitors and to ensure their safety/ <i>om die besoekers te beheer en hulle veiligheid te verseker</i> ✓✓O OR/OF ✓✓O Control the movement of the animals.	2O correct reason (2)	MP L1 D
1.2.4	Main road/ <i>hoofpad</i> ✓✓A	2A correct type of the road (2)	MP L1 M
1.2.5	True/ <i>Waar</i> ✓✓A	2A correct answer (2)	MP L1 M
1.3.1	Circle/ <i>Sirkel</i> ✓✓A	2A correct shape (2)	M L1 E
1.3.2	8,5 m ÷ 2 ✓MA = 4,25 m ✓A = 425 cm ✓C OR/OF 8,5 m = 850 cm 850 cm ÷ 2 = 425 cm	1MA divided by 2 1A answer 1C conversion 1C conversion 1MA divided by 2 1A answer (3)	M L1 M
1.3.3	5 (five/ <i>vyf</i>) ✓✓A	2A correct number (2)	MP L1 E
1.3.4	Q ✓✓A OR/OF Plan that shows the layout of a building as seen from above/ <i>plan wat die uitleg van 'n gebou toon soos van bo gesien</i> ✓✓A	2A correct explanation 2A correct explanation (2)	MP L1 M
[29]			

QUESTION/VRAAG 2 [25 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation Verduideliking	T&L
2.1.1	5 (five/vyf) ✓✓ A	2A correct answer (2)	MP L1 E
2.1.2 (a)	To tighten the bolts/ <i>om die boute mee vas te maak</i> ✓✓ A	2A correct function (2)	MP L4 E
2.1.2 (b)	Bolt/Bout M6 × 30 mm ✓ A Washer/wasser ✓ A Plastic cover/ <i>plastiekdoppie</i> ✓ A	3A correct components (3)	MP L2 E
2.1.3	1 C ✓ A Connect the TV plate to support pillar by using bolts and washers, then tighten the bolts with the Allen key. 2 A ✓ A Tear off plastic film of foot pads, then attach foot pads near four corners of the base bottom. 3 B ✓ A Attach Wire Clips into the holes of Support Pillar.	3A correct match (3)	MP L2 E
2.2.1	a = 7 ✓ A b = 25 ✓ A c = 40 ✓ A OR/OF a = 21 - 14 = 7 ✓ A b = 14 + 11 = 25 ✓ A c = 25 + 15 = 40 ✓ A a = 15 - 8 = 7 ✓ A c = 21 + 19 = 40 ✓ A	1A correct calculating 7 1A correct calculating 25 1A correct calculating 40 1A correct calculating 7 1A correct calculating 25 1A correct calculating 40 (3)	P L2 E
2.2.2	✓ RT $\frac{8}{15}$ ✓ RT = 0,53 ✓ CA	1RT numerator 1RT denominator 1CA correct answer NPR (3)	P L2 M
2.2.3	Yes ✓ A The number of people who would buy is more than the number of people who would not buy. ✓ O <i>Ja/Die aantal mense wat sal koop is meer as die aantal mense wat nie sal koop nie.</i>	1A yes 1O correct explanation. (2)	P L4 M

2.3	Number of bowls along the length of the box/<i>Aantal bakkies langs die lengte van die boks:</i> $= \frac{800}{170} \checkmark \text{MA}$ $= 4,7 \checkmark \text{CA}$ $= 4 \checkmark \text{R}$ Number of bowls along the width of the box/<i>Aantal bakkies langs die breedte van die boks:</i> $= \frac{620}{170}$ $= 3,6$ $= 3 \checkmark \text{CA}$ Number of bowls along the height of the box/<i>Aantal bakkies langs die hoogte van die boks:</i> $= \frac{400}{80}$ $= 5 \checkmark \text{CA}$ Total number of bowls/<i>Totale aantal bakkies:</i> $4 \times 3 \times 5 \checkmark \text{MCA}$ $= 60 \checkmark \text{CA}$	1MA dividing length of the box with the long diameter of the bowl 1CA answer 1R rounding down 1CA rounded answer 1CA rounded answer 1MCA multiply 3 answers 1CA correct simplification (7)	MP L3 M
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QUESTION/VRAAG 3 [33 MARKS/PUNTE]

Q/V	Solution/Oplossing	Explanation <i>Verduideliking</i>	T&L
3.1.1	Circumference of a circle/<i>Omtrek van die sirkel</i> $= 3,142 \times 54 \text{ cm} \checkmark \text{SF}$ $= 69,668 \text{ cm} \checkmark \text{A} \checkmark$	1SF correct substitution 1A correct simplification 1A correct unit NPR (3)	M L2 E
3.1.2	1 kg = 2,2046 pounds/<i>pond</i> ? = 74 pounds/<i>pond</i> $= \frac{74}{2,2046} \checkmark \text{MA}$ $= 33,57 \text{ kg} \checkmark \text{CA}$	1MA dividing correct values 1CA correct simplification and rounding (2)	M L2 M
3.1.3	Radius = $\frac{32}{2} = 16 \text{ cm} \checkmark \text{A}$ Depth/<i>diepte</i> = 0,4 m to cm = 40 cm $\checkmark \text{C}$ Volume = $3,142 \times (\text{radius})^2 \times \text{depth}$ = $3,142 \times (16 \text{ cm})^2 \times 40 \text{ cm} \checkmark \text{SF}$ = $32\,174,08 \text{ cm}^3 \checkmark \text{CA}$	1A radius 1C convert m to cm 1SF substitution into the formula 1CA correct simplification (4)	M L2 M

3.1.4	$70 \text{ cm} - 54 \text{ cm} = 16 \text{ cm} \checkmark \text{MA}$ $16 \text{ cm} \div 2 = 8 \text{ cm} \checkmark \text{CA}$ Each side/ elke kant = 80 mm $\checkmark \text{C}$	1MA subtracting correct values 1CA dividing by 2 and simplification 1C conversion (3)	M L3 E
3.1.5	$^{\circ}\text{F} = (^{\circ}\text{C} \times \frac{9}{5}) + 32$ $2\,500 = (^{\circ}\text{C} \times \frac{9}{5}) + 32 \checkmark \text{SF}$ $2\,468 = ^{\circ}\text{C} \times \frac{9}{5}$ $^{\circ}\text{C} = \frac{2\,468}{\frac{9}{5}} \checkmark \text{M}$ $= 1\,371,11 ^{\circ}\text{C} \checkmark \text{CA}$	1SF correct substitution 1M changing the subject of the formula 1CA correct simplification (3)	M L3 D
3.2.1	$\checkmark \text{MA}$ $35 \text{ min} + 50 \text{ min} + 50 \text{ min} + 30 \text{ min} + 30 \text{ min} + 45 \text{ min} = 240 \text{ min} \checkmark \text{CA}$ $= 4 \text{ hours} \checkmark \text{C}$	1MA adding all the values 1CA correct simplification 1C min to hours (3)	M L2 E
3.2.2	Going to church/ gaan kerk toe $\checkmark \checkmark \text{O}$	2A opinion (2)	M L4 E
3.2.3	3 grams per kg/ 3 gram per kg $\checkmark \text{RT}$ $66 \text{ kg} \times 3 \checkmark \text{MCA}$ $= 198 \text{ g} \checkmark \text{CA}$	1RT correct grams 1MCA multiplying correct values 1CA correct simplification (3)	M L2 M
3.2.4	Quantity of water per day (in litres)/ hoeveelheid water per dag (in liter) $= \frac{\text{weight (in kg)}}{25} - \frac{3}{10}$ $= \frac{66}{25} - \frac{3}{10} \checkmark \text{SF}$ $= 2,64 - 0,3$ $= 2,34 \text{ litres/liter} \checkmark \text{CA}$ NOT CORRECT/ NIE KORREK NIE $\checkmark \text{O}$	1SF substituting 66 kg 1CA correct simplification 1O conclusion (3)	M L4 E

3.3.1	148 cm = 1,48 m ✓C $BMI/LMI = \frac{62 \text{ kg}}{(1,48 \text{ m})^2} \checkmark \text{SF}$ = 28,31 kg/m² ✓CA Status = overweight/oorgewig ✓CA Her claim is not valid/haar stelling is ongeldig. ✓O	1C conversion 1SF substitution 1CA answer 1CA health status 1O opinion (5)	M L4 M
3.3.2	Diet/dieet ✓✓O OR/OF Exercise/oefen	2 Opinion (2)	M L4 E
		[33]	

QUESTION/VRAAG 4 [35 MARKS/PUNTE]

Q/V	Solution/Oplossing	Explanation Verduideliking	T&L
4.1.1	Measurements of a bar using a ruler tends to be less accurate/meting van 'n staaf met 'n liniaal is geneig om minder akkuraat te wees. ✓✓A	2A correct answer (2)	MP L1 E
4.1.2	No window/geen ventster nie ✓A To provide light in the garage/geen lig in die motorhuis nie ✓✓O OR/OF No door into the house/geen deur na binne die huis nie ✓A For safety purposes/vir veiligheid ✓✓O	1A short fall 2A explanation 1A short fall 2A explanation (3)	MP L4 E
4.1.3	Bar Scale measure/staafskaalmeting = 3,3 cm ✓A 3,3 cm = 3 m ✓MA 0,033 : 3 1 : 90,9 ✓MCA ✓A Garage door measure/motorhuisdeurmeting = 3,8 cm Actual measurement/werklike meting = 3,8 cm × 90,9 ✓MCA = 345,42 cm ✓CA = 3,46 m	1A measure bar scale up to 3m 1 MA correct ratio 1MCA finding correct unit ratio 1A measure door opening (± 1 mm) 1MCA multiplying correct values 1CA correct simplification	M L2 D

	OR/OF Bar scale/staafskaal: $\checkmark A$ $3,3 \text{ cm} = 3 \text{ m} \checkmark MA$ $\checkmark A$ $3,8 \text{ cm} = \frac{3,8 \text{ cm} \times 3 \text{ m}}{3,3 \text{ cm}} \checkmark MCA \checkmark MCA$ $= 3,4545 \text{ m} \checkmark CA$	1A measure bar scale up to 3m 1 MA correct ratio 1A measure door opening ($\pm 1 \text{ mm}$) 1MCA multiplying correct values 1MCA dividing 1CA correct simplification (6)	
4.1.4 (a)	$\text{m}^3 \checkmark \checkmark A$	2A correct unit (2)	M L1 E
4.1.4 (b)	$1 \text{ m}^3 = 2,5 \text{ ton}$ $8 \text{ m}^3 = ? \text{ tons}$ Number of tons/aantal ton $= 2,5 \times 8 \checkmark A$ $= 20 \text{ tons} \checkmark CA$ $= 20\,000 \text{ kg} \checkmark C$	1A correct multiplication 1CA correct simplification 1C convert tons to kg (3)	M L2 D
4.1.4 (c)	Depth/diepte $= 120 \text{ mm}$ $= 0,12 \text{ m} \checkmark C$ Volume needed/benodig $= \text{area} \times \text{depth}$ $= 18,8 \text{ m}^2 \times 0,12 \text{ m} \checkmark SF$ $= 2,256 \text{ m}^3 \checkmark CA$ Volume available/beskikbaar $= 8 \text{ m}^3 \times \frac{3}{5} \checkmark MA$ $= 4,8 \text{ m}^3 \checkmark CA$ Sibusiso is correct/Sibusiso is korrek $\checkmark O$	1C convert mm to m 1SF correct substitution 1CA correct simplification 1MA multiplying correct values 1CA correct simplification 1O conclusion (6)	M L4 D
4.1.4 (d)	Total cost/Totale koste $= R1\,950 \times 2,256 \checkmark MCA$ $= R4\,399,20 \checkmark CA$	CA Volume from 4.1.4 (c) 1 MCA multiplying correct values 1CA correct simplification (2)	F L2 E

4.2.1	✓C 220 mm = 0,22 m 105 mm = 0,105 m Area of the brick/<i>oppervlakte van steen</i> = $0,22 \times 0,105$ ✓SF = $0,0231 \text{ m}^2$ ✓CA Area 1/<i>oppervlakte 1</i> = $2,8 \text{ m} \times 7 \text{ m}$ = $19,6 \text{ m}^2$ ✓CA Area 2/<i>oppervlakte 2</i> = $2,5 \text{ m} \times 5 \text{ m}$ = $12,5 \text{ m}^2$ ✓CA Total area/<i>totale oppervlakte</i> = $19,6 \text{ m}^2 + 12,5 \text{ m}^2$ = $32,1 \text{ m}^2$ ✓CA Number of bricks/<i>aantal stene</i> = $\frac{32,1}{0,0231}$ ✓MCA = $1389,61$ ✓CA = 1390 bricks ✓R OR/OF Number of bricks = $\frac{19,6}{0,0231}$ = 848,48 = 849 Number of bricks = $\frac{12,5}{0,0231}$ = 541,12 = 542 Total number = $849 + 542$ = 1391 bricks	1C convert mm to m 1SF correct substitution 1CA area of the brick 1CA area 1 1CA area 2 1CA total area 1MCA divided areas 1CA answer 1R rounding up (9)	M L3 D
4.2.2	Number of pallets/<i>aantal pallette</i> = $\frac{1390}{500}$ ✓MCA = 2,78 = 3 pallets ✓CA	CA from 4.2.1 1MCA division 1CA correct simplification and rounding up (2)	M L2 E
		[35]	

QUESTION/VRAAG 5 [28 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation Verduideliking	T & L
5.1.1	Dubai ✓✓A	2A name of the country (2)	MP L1 M
5.1.2	Distance in miles/ <i>Afstand in myl</i> ✓RT $= \frac{9\,005\text{ km}}{1,609\text{ km}} \checkmark \text{MA}$ $= 5\,596,64\text{ miles/myl} \checkmark \text{CA}$	1 RT 9005 km 1 MA dividing 1CA correct answer (3)	M L2 M
5.1.3	8 945 309 ✓✓A	2A correct answer (2)	MP L1 E
5.1.4 (a)	19:25 ✓✓A	2A correct time format (2)	M L1 E
5.1.4 (b)	✓RT Total amount/<i>totale bedrag</i> = $R16\,798 \times 3$ = $R50\,394 \checkmark \text{CA}$ $R50\,394 \times 0,15$ = $R7\,559,10 \checkmark \text{A}$ Amount including VAT/<i>bedrag insluitend BTW</i> = $R50\,394 + R7\,559,10 \checkmark \text{MCA}$ = $R57\,953,10 \checkmark \text{CA}$ OR/OF $R50\,394 \times 1,15 \checkmark \text{MCA}$ = $R57\,953,10 \checkmark \text{CA}$ OR/OF ✓RT $R16\,798 \times 0,15 = R2\,519,70 \checkmark \text{A}$ Amount including VAT/<i>bedrag insluitend</i> $R16\,798 + R2\,519,70 \checkmark \text{MCA}$ = $R19\,317,70 \checkmark \text{CA}$ Total amount/<i>totale bedrag</i> = $R19\,317,70 \times 3$ = $R57\,953,10 \checkmark \text{CA}$	1RT correct amount 1CA amount 1A correct VAT value 1MCA adding 1CA correct amount 1MCA increasing by 15% 1CA correct amount 1RT correct amount 1A correct VAT value 1MCA adding 1CA correct amount 1CA correct amount (5)	F L2 M

5.2.1	Distance = average speed $\times$ time <i>Afstand = gemiddelde spoed $\times$ tyd</i> $5\,596,64 \text{ miles/myl} = 647 \text{ mph} \times \text{time} \checkmark \text{SF}$ $\text{Time/tyd} = \frac{5\,596,64 \text{ mile/myl}}{647 \text{ mph}} \checkmark \text{MA}$ $= 8,6501 \dots \checkmark \text{CA}$ $= 8 \text{ hours and } 39 \text{ minutes/}8 \text{ uur en } 39 \text{ minute} \checkmark \text{C}$ $03:30 + 8 \text{ hours } 39 \text{ min/}8 \text{ uur en } 39 \text{ min}$ Time of arrival/<i>Aankomstyd</i> = 12:09 $\checkmark \text{CA}$ $12:09 + 1 \text{ hour/uur } 30 \text{ min} = 13:39 \checkmark \text{CA}$ Departure time to London/<i>vertrektyd na Londen</i> = 14:55 Her claim is valid/<i>haar stelling is geldig</i> $\checkmark \text{O}$ OR/OF $14:55 - 1 \text{ hour/uur } 30 \text{ min} = 13:25 \checkmark \text{CA}$ Her claim is correct/<i>haar stelling is geldig</i> $\checkmark \text{O}$ OR/OF $647 \text{ mph} = 1041,029767 \text{ km/h}$ $\text{Time/tyd} = \frac{9005 \text{ km}}{1041,029767 \text{ km/h}} \checkmark \text{SF} \checkmark \text{S}$ $= 8,650088869 \checkmark \text{CA}$ $= 8 \text{ hours/uur } 39 \text{ min} \checkmark \text{C}$ $03:30 + 8 \text{ hours/uur } 39 \text{ min} = 12:09 \checkmark \text{MCA}$ $12:09 + 1 \text{ hours/uur } 30 \text{ min} = 13:39 \checkmark \text{MCA}$ Her claim is valid/<i>haar stelling is geldig</i>. $\checkmark \text{O}$	CA distance in miles from 5.1.2 1SF correct substitution 1MA changing the subject 1CA answer 1C convert min to hours 1CA arrival time 1CA correct arrival time 1O conclusion 1CA correct arrival time 1O conclusion 1SF correct substitution 1S changing the subject 1CA answer 1C conversion 1MCA arrival time 1MCA time 1O conclusion (7)	M L4 M
5.2.2	Volume = $\frac{\text{Mass}}{\text{Density}}$ / <i>Volume = $\frac{\text{Massa}}{\text{Digtheid}}$</i> $\checkmark \text{RT}$ $= \frac{91\,625 \text{ kg}}{0,85 \text{ kg/l}} \checkmark \text{MA}$ $= 107\,794,12 \text{ l} \checkmark \text{CA}$	1RT correct mass 1MA dividing correct values 1CA answer (3)	M L2 E

5.2.3	1 nautical mile/seemyl = 6 076 feet ? nautical mile/seemyl = 35 000 feet ✓RT $? \times 6\,076 = 35\,000$ Altitude/hoogte = $\frac{35\,000}{6\,076}$ ✓MA = 5,76 nautical miles/seemyl ✓CA = 6 Nautical miles/seemyl ✓R	1RT both correct values 1MA dividing 1CA answer 1R rounding (4)	M L2 M
		[28]	

TOTAL/TOTAAL: 150

