



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**PROVINCIAL STANDARDISED
ASSESSMENT**

GRADE 12

MATHEMATICAL LITERACY P2

PREPARATORY EXAMINATION

SEPTEMBER 2026

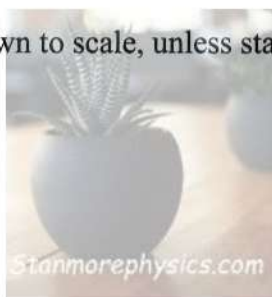
MARKS: 150

TIME: 3 hours

**This question paper consists of 11 pages and a
17-page SPECIAL ANSWER BOOK.**

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the 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 TABLE 1 below gives statements and definitions of terminology used in Mathematical Literacy.

TABLE 1: STATEMENTS AND DEFINITIONS OF CONCEPTS

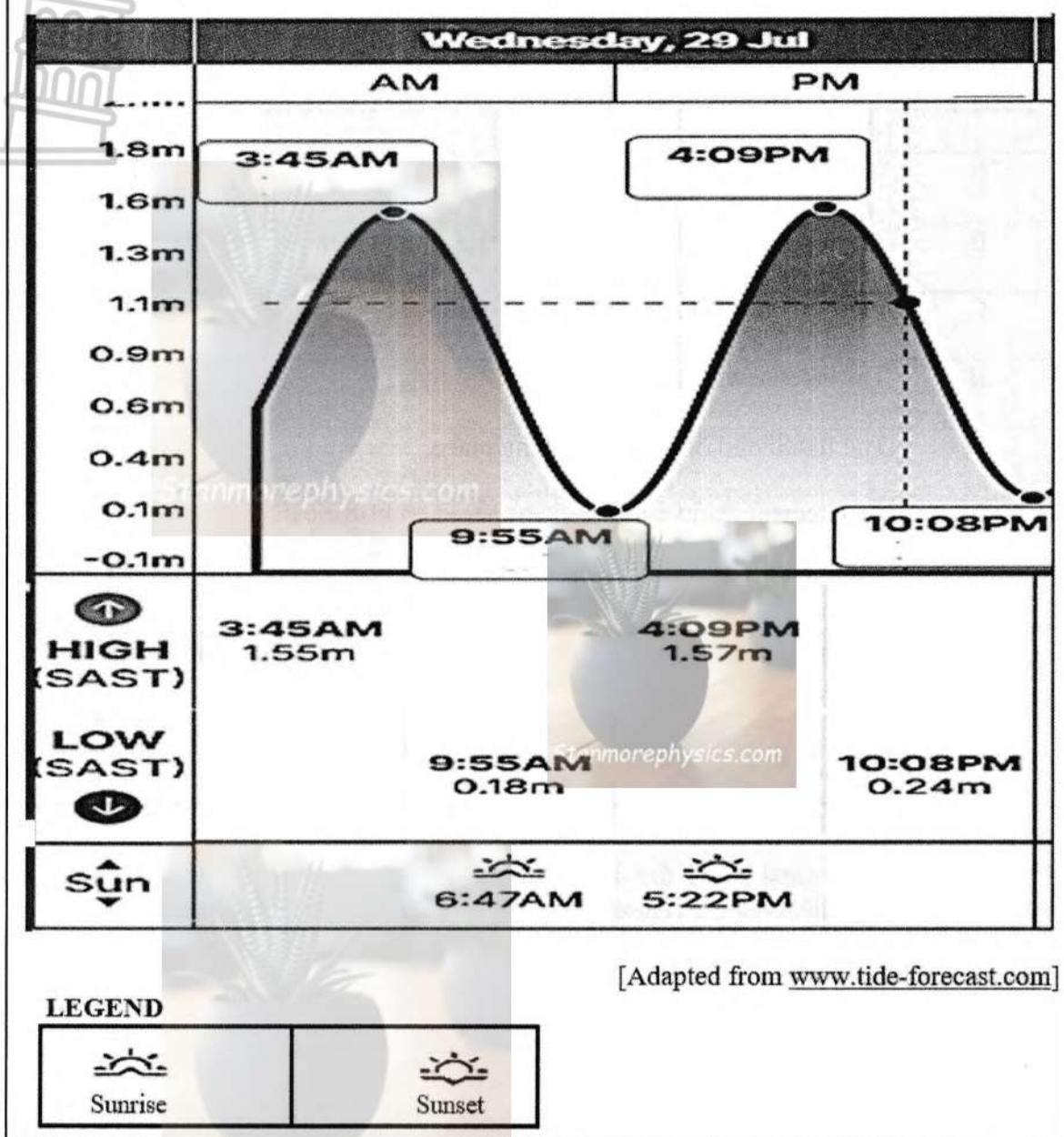
A	Calculated as the distance traveled divided by the time taken.
B	The top /aerial/ birds eye view of the arrangement of the rooms.
C	The amount of space a 3D object occupies.
D	The side view of the outside of a building.
E	The likelihood of an event taking place.
F	A statement about a future event based on historical data.
G	Total distance of the outline of a shape.
H	The maximum amount of space available to hold solids, liquids and gases.
I	The total amount of flat space inside a two-dimensional shape, measured in square units.

Use TABLE 1 above and match the statements and definitions with the terminology below. Write only the letter (A-I) next to the question numbers (1.1.1 to 1.1.5), e.g., 1.1.6 J.

- 1.1.1 Area (2)
- 1.1.2 Speed (2)
- 1.1.3 Prediction (2)
- 1.1.4 Elevation plan (2)
- 1.1.5 Capacity (2)

1.2

The tide timetable below provides data on the high and low tides, as well as sunrise and sunset times, recorded on 29 July 2026 in Margate according to South African Standard Time (SAST).

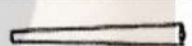


Use the timetable and information above to answer the questions that follow.

- 1.2.1 Name TWO people who would use a tide timetable in their daily activities. (2)
- 1.2.2 Write down the time of the second high tide in a 24-hour time format. (2)
- 1.2.3 Determine the difference in height, in centimetres, between the morning high tide and the morning low tide. (3)
- 1.2.4 Write the time of the sunset in words. (2)
- 1.2.5 Convert 3 hours and 45 minutes to minutes. (3)

1.3

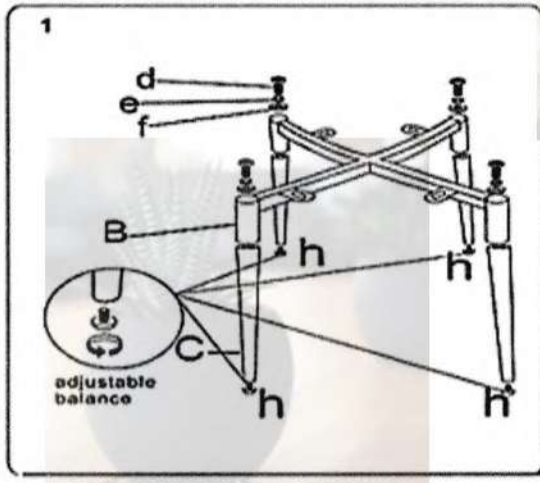
Many furniture stores sell furniture that must be assembled by the customer. Illustrated below are the steps and components needed to assemble a chair. The chair components to assemble the chair are labelled (A to C) and the assembly components are labelled (a to h). The assembly process is shown in diagrams 1 and 2. downloaded from Stanmorephysics.com

CHAIR COMPONENTS			
A	Chair back		1
B	Chair base		1
C	Chair leg		4

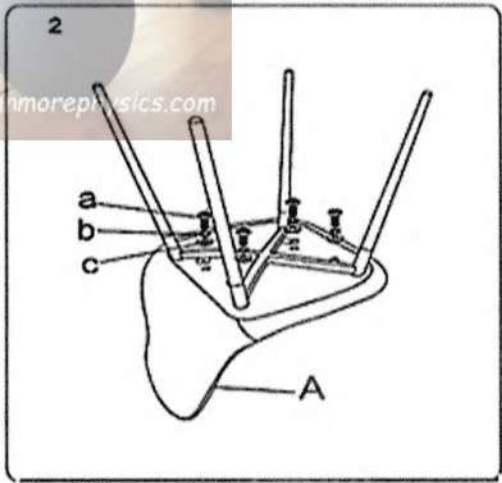
ASSEMBLY COMPONENTS				
a	Small Screw	M6X20		4
b	Small Washer	M6		4
c	Small Flat Washer	M6		4
d	Large Screw	M8X35		4
e	Large Washer	M8		4
f	Large Flat Washer	M8		4
g	Assembly Tool: Allen key	M5		1
h	Leveling Feet			4

ASSEMBLY PROCESS

1



2



Use the information above to answer the questions that follow.

- 1.3.1 Determine the total number of parts in the completed the chair. (2)
- 1.3.2 According to the assembly process in diagram 1, state the direction in which part **h** must be turned to adjust the balance. (2)
- 1.3.3 Identify the tool used to assemble the chair. (2)
- 1.3.4 Name the chair component in the assembly process in diagram 2. (2)

[30]

QUESTION 2

- 2.1 The map on ANNEXURE A in the ANSWER BOOK shows the roads that can be used to access the University of Western Cape (UWC) and Cape Peninsula University of Technology (CPUT).

Use the information in ANNEXURE A to answer the questions that follow.

- 2.1.1 Identify the compass direction of CPUT from UWC. (2)
- 2.1.2 Name the national and the regional road shown on the map. (2)
- 2.1.3 Provide detailed directions to a student who will travel from Cape Town International Airport to the Belhar Campus indicated with an X, using the shortest route. (4)
- 2.1.4 Describe how the railway line is shown on the map. (2)

- 2.2 The 36ONE Mountain Biking Challenge, commonly known as 361, is an annual mountain bike race held in Oudtshoorn, South Africa. The race starts and finishes at Kleinplaas Holiday Resort. ANNEXURE B in the ANSWER BOOK shows the route map of the race.

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

- 2.2.1 Determine the total distance of the race if a cyclist travels at an average speed of 9,86 km/h and takes 36 hours and 6 minutes to complete the race.

You may use the formula.

$$\text{Distance} = \text{speed} \times \text{time} \quad (4)$$

- 2.2.2 Determine the probability, as a percentage, of a spectator being able to watch the race at one of the water points. (3)
- 2.2.3 Explain the purpose of a check point (CP) in this context. (2)

- 2.3 ANNEXURE C in the ANSWER BOOK shows the floor plan, the elevation plan and cross-sectional view of a double-storey house. downloaded from Stanmorephysics.com

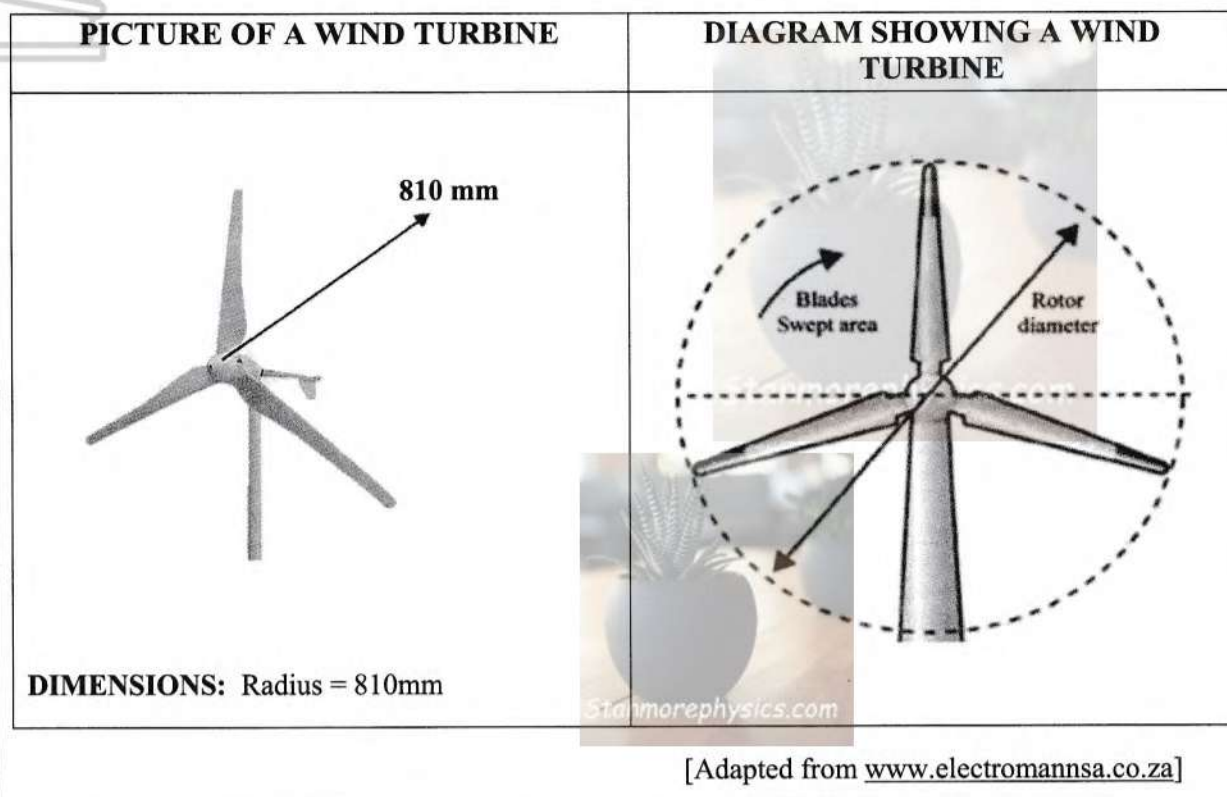
Use ANNEXURE C and the information above to answer the following questions.

- 2.3.1 Identify the number of doors shown on the ground floor plan. (2)
- 2.3.2 Name the elevation illustrated in Diagram 1 on ANNEXURE C. (2)
- 2.3.3 Diagram 2 shows a cross-sectional view of the house. Identify the feature that connects the ground floor to the first floor. (2)
- 2.3.4 Measure the length of the floor plan shown in Diagram 3. Use the number scale provided to determine the actual length, in metres of the house. (4)

[29]

QUESTION 3

- 3.1 Wind turbines generate clean, renewable energy by converting wind into electricity. The image below shows a 1 kW (kilowatt) household wind turbine used to generate electricity. The turbine has three rotor blades.



Use the image and the information above to answer the questions that follow:

- 3.1.1 Determine the length of one circular path (rotation), in metres.

You may use the formula:

$$\text{Circumference} = 3,142 \times \text{Diameter} \quad (5)$$

- 3.1.2 Determine the number of full rotations made by the blades, if the turbine rotates at a speed of 12 metres per second (m/sec). (3)

- 3.1.3 The manufacturer claimed that the area covered by the rotor blade of the wind turbine in motion is 2,0615 m² rounded off to four decimal places.

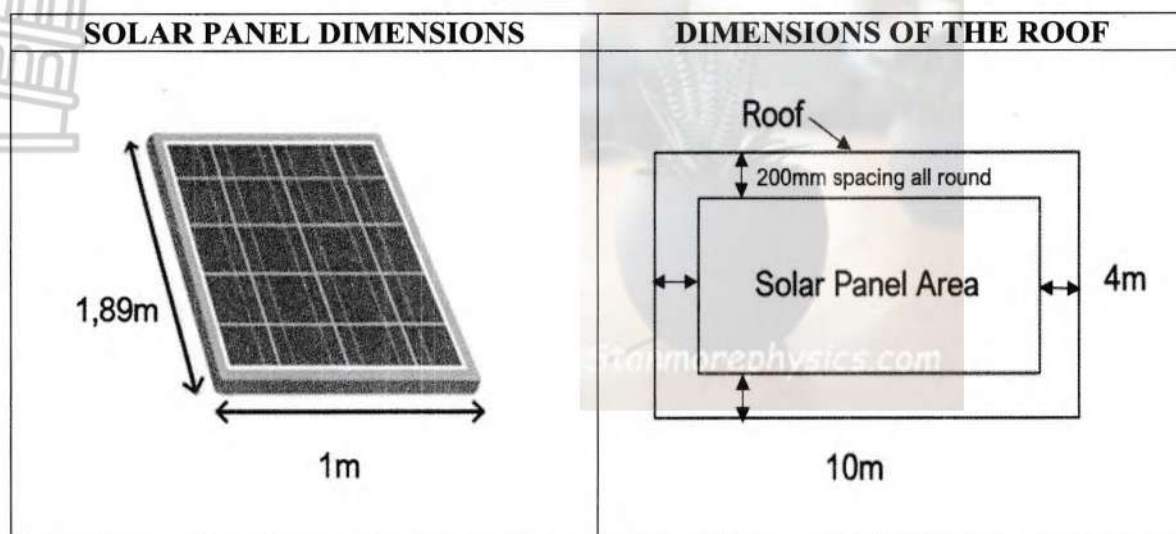
Verify, with calculations whether the manufacturer's statement is VALID.

You may use the formula:

$$\text{Area} = 3,142 \times \text{radius}^2 \quad (4)$$

3.2

In an attempt to decrease electricity costs, Mr Mbatha installed solar panels on the roof of his house to generate electricity from sunlight. The solar panels must be installed at least 200 mm from the edges of the roof as shown in the diagram below. downloaded from Stanmorephysics.com



[Adapted from www.greenmatch.co.uk]

Use the image and the information above to answer the questions that follow.

3.2.1 Determine the area of one solar panel, in m^2 .

You may use the formula:

$$\text{Area} = \text{Length} \times \text{Width} \quad (3)$$

3.2.2 Calculate the maximum number of solar panels that can be installed on the roof if the panels must be positioned at least 200 mm away from the edges of the roof. (9)

3.2.3 Determine the weight, in tons, of the solar panels from Q3.2.2, if each solar panel weighs 20kg. (3)

3.2.4 Provide one explanation why solar power systems have become a popular choice for many households in South Africa. (2)

[29]

QUESTION 4

- 4.1 RotoTank, a company that manufactures heavy-duty vertical water storage tanks, uses images in its advertising materials to illustrate the size and storage capacity of its products. The image below compares the height of a RotoTank to the height of a man standing next to it. The tank is 10 feet 6 inches high, while the man is 1.7 m tall.

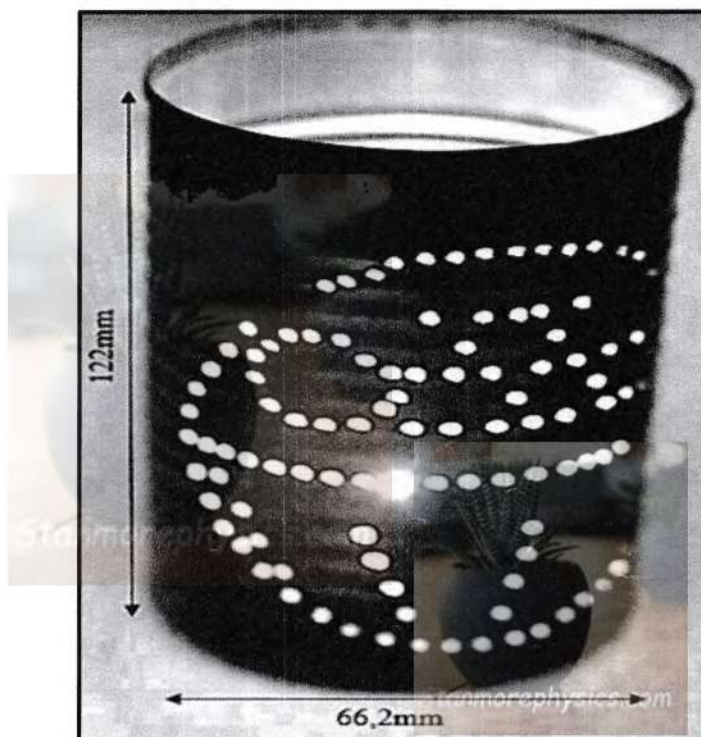
DIMENSIONS OF THE ROTO TANK	
	[Adapted source: www.rototank.co.za]
NOTE: 1 inch = 2,54cm 1 foot/feet = 0,3048m 1 000 cm³ = 1 litre	

Use the image and information above to answer the following questions.

- 4.1.1 Determine the height, in meters, of the Roto Tank. (5)
- 4.1.2 A claim was made that the radius of the Roto Tank, when rounded off to THREE decimal places, is approximately 122,135 cm. The Roto Tank has a volume of 15 000 litres.
- Volume = $3,142 \times r^2 \times \text{height}$**
- Verify, showing all calculations, if this claim is CORRECT. (8)
- 4.1.3 Write down the ratio of the man's height to the height of the Roto Tank in the form 1 : rounded off to TWO decimal places. (3)
- 4.1.4 Explain how the image of the man next to the Roto Tank helps potential customers estimate and understand the size of the tank. (2)

- 4.2 Mphume uses recycled tin cans, such as the one shown below, to create decorative tin-can lanterns. The side and base of each tin-can lantern are painted black, while the top remains open. Decorative patterns are punched into the sides of the tin-can lantern to allow the candlelight to shine through. downloaded from Stanmorephysics.com

Each tin can lantern has a diameter of 66,2 mm and a height of 122 mm.



[Adapted from www.frugalfun.com]

DIMENSIONS	
Height	122 mm
Diameter	66,2 mm

Use the image and the information above to answer the following questions.

- 4.2.1 Determine the surface area of the tin-can lantern, in cm^2 rounded to the nearest cm^2 .

You may use the formula:

$$\text{Surface Area (SA)} = (2 \times 3.142 \times \text{radius}^2) + (2 \times 3.142 \times \text{radius} \times \text{height}) \quad (7)$$

- 4.2.2 Mphume claims that only 500 ml of black paint is required to apply two coats of paint to 25 tin-can lanterns. One litre of paint covers an area of 5 m^2 .

Verify, showing all calculations, whether her claim is CORRECT. (7)

[32]

QUESTION 5

The 2026 Fédération Internationale de Football Association (FIFA) World Cup was jointly hosted by Canada, the United States of America (USA), and Mexico. The tournament was played from 11 June 2026 to 19 July 2026. The map on ANNEXURE D in the ANSWER BOOK shows the stadiums in the host cities where the matches were played. The final match was played at the MetLife Stadium in East Rutherford, New Jersey, USA.

NOTE: 1 mile = 1,609 km

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

- 5.1 Determine the total duration of the FIFA World Cup tournament, in days, from the opening day to the final match. (3)
- 5.2 Determine the probability, expressed as a decimal, that a randomly selected stadium is located in Mexico. (3)
- 5.3 Identify the type of scale shown on ANNEXURE D and explain what the scale represents. (3)
- 5.4 A claim was made that the road distance between San Francisco and New York is 4 711 km.
- Using the scale provided on ANNEXURE D, verify whether this claim is CORRECT. Show ALL calculations. (7)
- 5.5 The straight-line distance between San Francisco, California, and MetLife Stadium in East Rutherford, New Jersey, is approximately 4 120 km. A plane takes approximately 5 hours 30 minutes to complete the journey.
- The road distance between the same two destinations is approximately 4 680 km, and travelling by car takes approximately 43 hours.
- A claim is made that a plane travels more than seven times faster than a car.
- Verify, showing ALL calculations, whether the claim is VALID.
- You may use the formula: **Distance = Speed × Time** (7)
- 5.6 The average July temperature in Toronto is 32 degrees Celsius ($^{\circ}\text{C}$). Calculate the average July temperature in degrees Fahrenheit ($^{\circ}\text{F}$). Round off your answer to the nearest whole number.
- You may use the formula: $^{\circ}\text{C} = \frac{5}{9} \times (^{\circ}\text{F} - 32)$ (5)
- 5.7 A supporter plans to attend matches in Los Angeles, Dallas, and Miami. Using the map, explain why travelling between these host cities would require careful planning. (2)

[30]

TOTAL MARKS: 150



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ANSWER BOOK/ANTWOORDBOEK

**MATHEMATICAL LITERACY /
WISKUNDIGE GELETTERDHEID**

PAPER 2 / PAPIER 2

GRADE 12 / GRAAD 12

SEPTEMBER 2026

PROVINCIAL STANDARDISED ASSESSMENT

SURNAME	
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FIRST NAMES	
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GRADE	
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BOOK NUMBER		OF		BOOKS
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SUBJECT NAME	MATHEMATICAL LITERACY	PAPER NUMBER	2
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MARKER			MODERATOR'S INITIALS IN RELEVANT BLOCK									
Question	Marks	Marker's Initials	Marks	DH	Marks	CM	Marks	DM	Marks	PM	Marks	EM
1												
2												
3												
4												
5												
TOTAL												

READ INSTRUCTIONS ON THE NEXT PAGE.

This answer book consists of 17 pages.

FOLLOW THESE INSTRUCTIONS CAREFULLY.

1. Clearly write your surname and names in the space provided.
2. Answer ALL questions in the spaces provided in this ANSWER BOOK ONLY. If you require additional space for your answers:
 - 2.1 Use the additional space provided at the end of the ANSWER BOOK.
 - 2.2 When answering a question in the additional space, indicate clearly the question number in the column on the left-hand side.
3. No pages may be torn from this ANSWER BOOK.
4. Read the instructions printed carefully which is given in the examination paper.
5. Candidates may not retain the 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. Draw a neat line through any work that must NOT be marked.

QUESTION 1

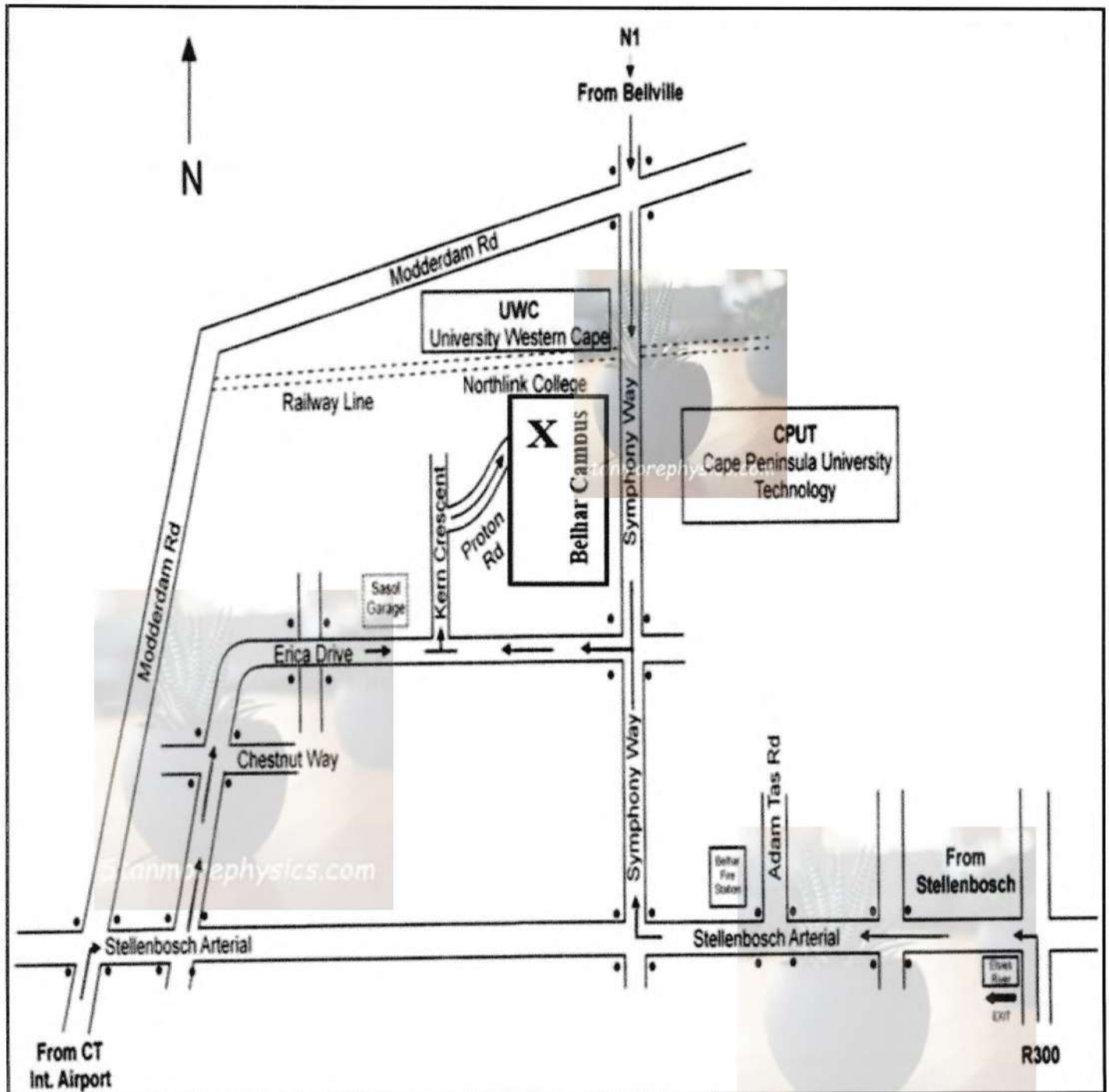
	Solution	Marks
1.1.1		(2)
1.1.2		(2)
1.1.3		(2)
1.1.4		(2)
1.1.5		(2)
1.2.1		(2)
1.2.2		(2)
1.2.3		(3)
1.2.4		(2)
1.2.5		(3)
1.3.1		(2)
1.3.2		(2)
1.3.3		(2)
1.3.4		(2)
		[30]

QUESTION 2

ANNEXURE A

QUESTION 2.1

MAP SHOWING ROADS LEADING TO UNIVERSITY OF WESTERN CAPE(UWC)
AND CAPE TOWN UNIVERISTY OF TECHNOLOGY(CPUT)



[Source:www.maps-cape-town.com]

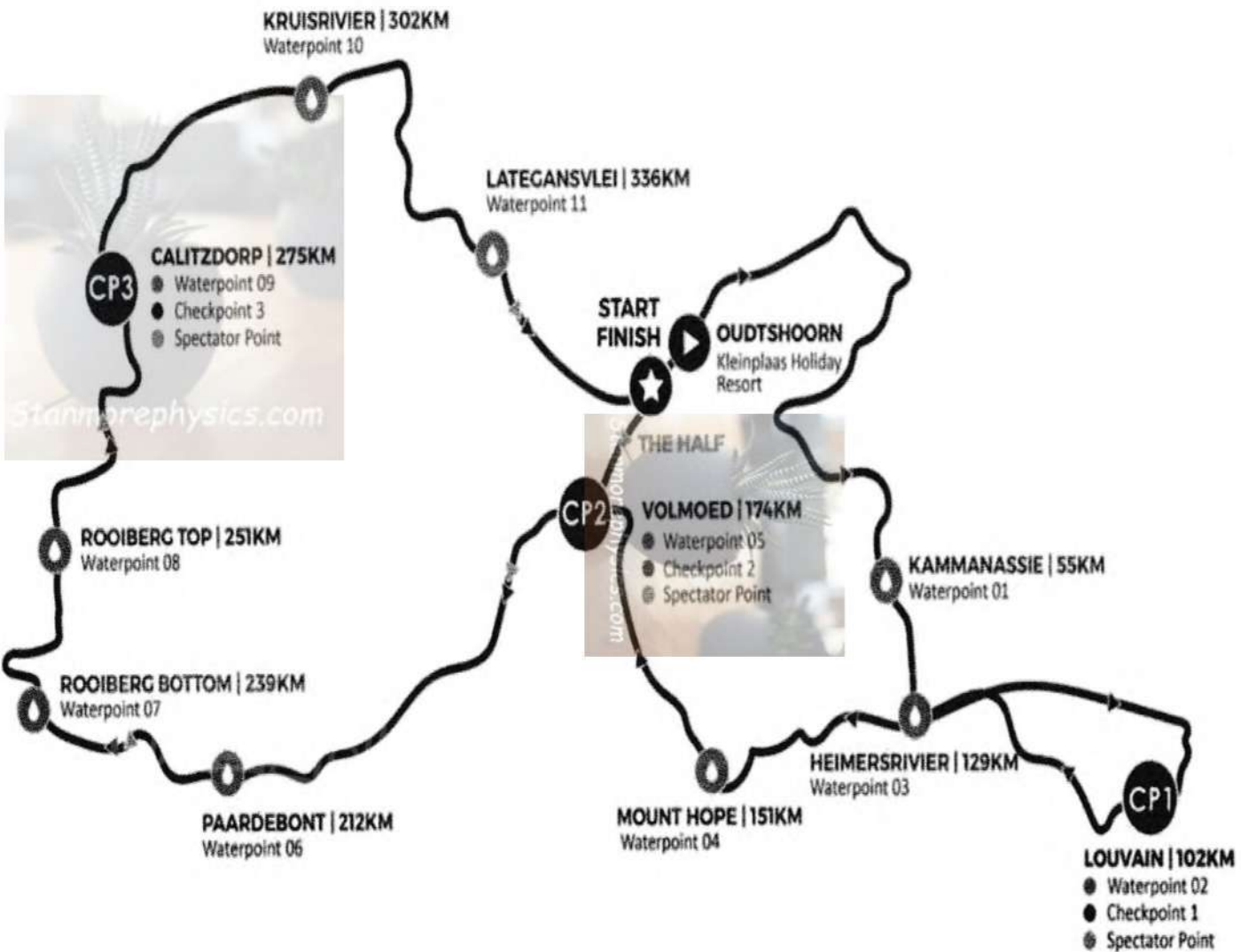
QUESTION 2

	Solution	Marks
2.1.1		(2)
2.1.2		(2)
2.1.3		(4)
2.1.4		(2)

ANNEXURE B

QUESTION 2.2

ROUTE MAP OF THE 36ONE MOUNTAIN BIKE RACE



	Solution	Marks
2.2.1		(4)
2.2.2	 Stanmorephysics.com	(3)
2.2.3		(2)

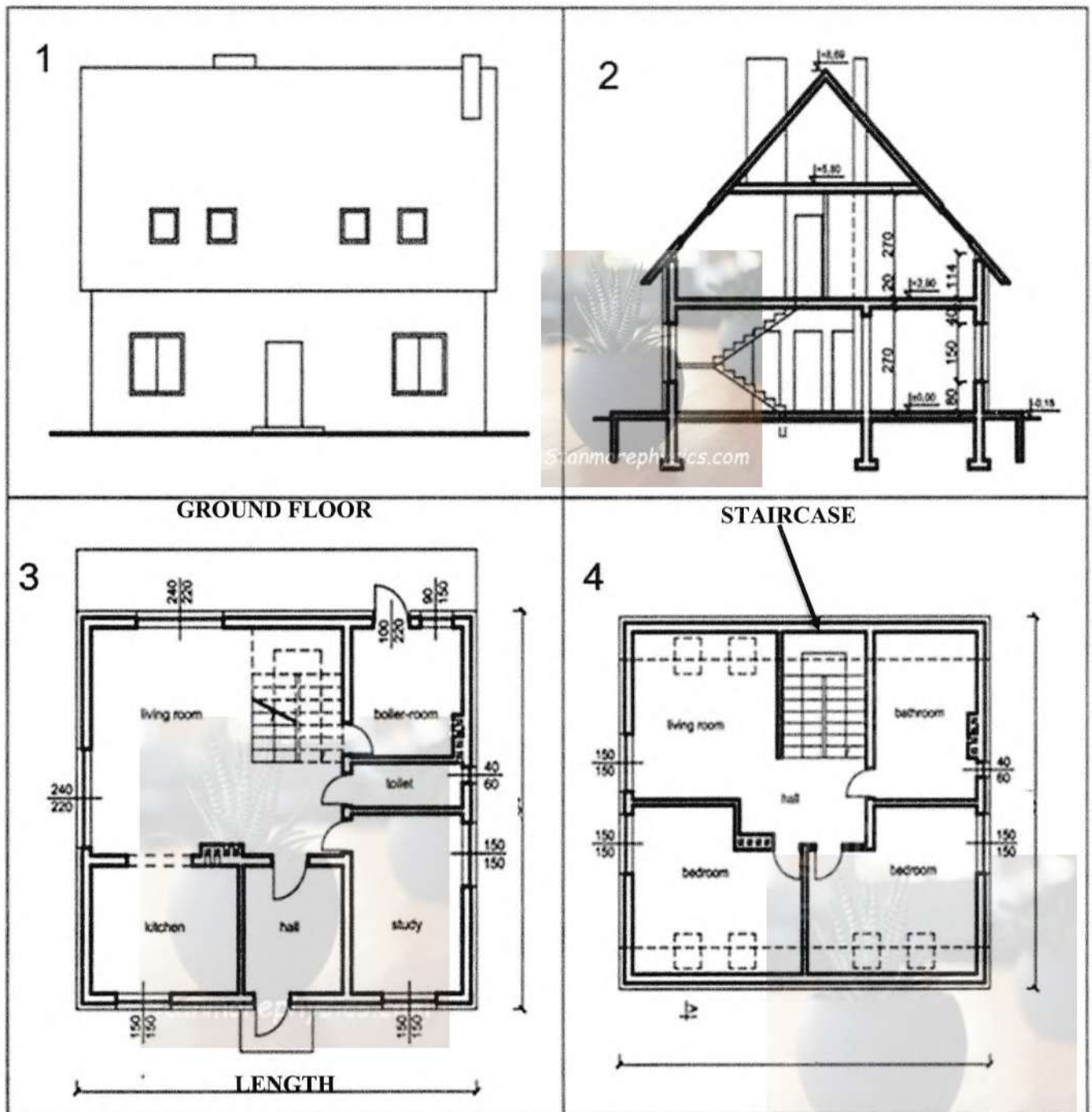
ANNEXURE C

QUESTION 2.3

THE FLOOR PLANS, ELEVATION PLAN AND CROSS SECTION VIEW OF A DOUBLE-STOREY HOUSE



SCALE 1: 158

[Source: www.researchgate.net]

	Solution	Marks
2.3.1		(2)
2.3.2		(2)
2.3.3		(2)
2.3.4		(4)
		[29]

QUESTION 3

	Solution	Marks
3.1.1		(5)
3.1.2		(3)
3.1.3		(4)

	Solution	Marks
3.2.1		(3)
3.2.2	 Stanmorephysics.com	(9)
3.2.3		(3)
3.2.4		(2)
		[29]

QUESTION 4

	Solution	Marks
4.1.1		(5)
4.1.2		(8)
4.1.3		(3)
4.1.4		(2)

	Solution	Marks
4.2.1		(7)
4.2.2		(7)
		[32]

QUESTION 5

ANNEXURE D

A MAP OF USA, CANADA AND MEXICO



LEGEND

		
CANADA	MEXICO	USA

[Source://www.thesun.co.uk]

QUESTION 5

	Solution	Marks
5.1		(3)
5.2		(3)
5.3		(3)
5.4		(7)
5.5		(7)

	Solution	Marks
5.6		(5)
5.7		(2)
		[30]

TOTAL MARKS: 150



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SEPTEMBER 2026

MARKING GUIDELINES

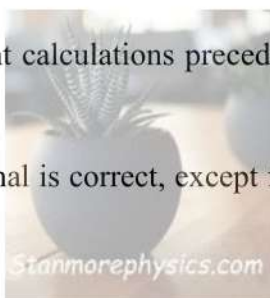
MARKS: 150

SYMBOL	EXPLANATION
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from a table/graph/diagram/map/document
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example/explanation
R	Rounding off
P	Penalty, e.g., for no units, incorrect rounding off, etc.
AO	Answer only
NPU	No Penalty for omitting units
NPR	No penalty for rounding
RCA	Rounding consistent with accuracy

This marking guideline consists of 19 pages, including an analysis grid of cognitive levels.

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 principal, if a 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. At least a $\frac{1}{3}$ of the mark before the conclusion.
- No penalty for rounding (NPR) if the first decimal is correct, except for questions involving money.



QUESTION 1 [30 MARKS] ANSWER ONLY FULL MARKS			
Ques	Solution	Explanation	T&L
1.1.1	I ✓✓A	2A correct letter (2)	M L1 E
1.1.2	A ✓✓A	2A correct letter (2)	MP L1 E
1.1.3	F ✓✓A	2A correct letter (2)	P L1 E
1.1.4	D ✓✓A	2A correct letter (2)	MP L1 E
1.1.5	H ✓✓A	2A correct letter (2)	M L1 E
1.2.1	Fishermen; Surfers; Lifeguards; Harbor workers; sailors/boat operators; shark net control personnel; port workers; divers/scuba divers; sea rescue personnel; kayakers; marine researchers; oyster/mussel or other shellfish harvester. ✓✓A	2A any two correct examples (2)	M L1 E
1.2.2	16:09 ✓✓A	2A time in a 24-hour format (2)	M L1 E
1.2.3	Difference (in m) = $1,55\text{m} - 0,18\text{m}$ ✓RT $= 1,37\text{m}$ Height (cm) = $1,37\text{m} \times 100$ ✓MA $= 137\text{cm}$ ✓A OR Difference height (cm) ✓RT $= (1,55\text{m} \times 100) - (0,18\text{m} \times 100)$ ✓MA $= 137\text{cm}$ ✓A	1RT both 1,55m and 0,18m 1MA multiply by 100cm 1A simplification in cm OR 1RT both 1,55m and 0,18m 1MA multiply both by 100cm 1A simplification in cm (3)	M L1 M

Ques	Solution	Explanation	T&L
1.2.4	✓A ✓A Twenty-two minutes past five in the afternoon. OR ✓A ✓A Twenty-two minutes past five post meridiem. OR ✓A ✓A Seventeen hundred hours and twenty-two minutes. OR ✓A ✓A Twenty-two minutes past seventeen hundred hours. OR ✓A ✓A Five twenty-two pm	2A time in words (2)	M L1 E
1.2.5	✓C Number of Minutes = $(3 \times 60\text{min}) + 45\text{min}$ ✓MA = 225 minutes ✓A	1C multiply by 60min 1MA adding 45 min 1A simplification in minutes (3)	M L1 E
1.3.1	Total number of parts = $1 + 1 + 4 + (7 \times 4)$ ✓MA = 34 parts ✓A	1MA adding assembly components 1A simplification (2)	MP L1 E
1.3.2	Anti-clockwise ✓✓A	2A correct direction (2)	MP L1 E
1.3.3	Part g ✓✓RT OR Allen Key ✓✓RT	2RT correct part (2)	MP L1 E
1.3.4	Chair back ✓✓RT	2RT correct component (2)	MP L1 E
		[30]	

qs	Solution
1	South East SE ✓✓A
2	✓RT

1A turn r

2RT desc

Stanmorephysics.com

[29]

QUESTION 3 [29 MARKS]

Ques	Solution	Explanation	T&L
3.1.1	Radius in metres = $810 \div 1\,000$ ✓C $= 0,81$ m ✓A Diameter = $0,81\text{m} \times 2$ ✓MCA $= 1,62\text{m}$ Circumference = $3,142 \times 1,62\text{m}$ ✓SF $\approx 5,09004$ m ✓CA OR Diameter = $810\text{mm} \times 2$ ✓MA $= 1\,620\text{mm}$ ✓A Circumference = $3,142 \times 1\,620\text{mm}$ ✓SF $= 5\,090,04\text{mm} \div 1\,000$ ✓C $\approx 5,09004$ m ✓CA downloaded from Stanmorephysics.com	1C divide by 1 000 1A simplification 1MCA multiply by 2 1SF correct substitution 1CA simplification OR 1MA multiply by 2 1A simplification 1SF correct substitution 1C divide by 1 000 1CA simplification NPR (5)	M L2 M
3.1.2	Number of rotations = $12 \div 5,09004$ ✓MCA $= 2,36$ ✓CA ≈ 2 ✓R	CA from 3.1.1 1MCA divide by 5,09004 1CA simplification 1R correct rounding (3)	M L2 M
3.1.3	Area = $3,142 \times (810\text{mm})^2$ ✓SF $= 2\,061\,466,2\text{mm}^2$ ✓CA $= 2\,061\,466,2\text{mm}^2 \div 1\,000^2$ ✓C $\approx 2,0615\text{m}^2$ The statement is VALID. ✓O OR ✓C Area = $3,142 \times (810\text{mm} \div 1\,000)^2$ ✓SF $= 2,0614662\text{m}^2$ ✓CA $\approx 2,0615\text{m}^2$ The statement is VALID. ✓O	1SF correct substitution 1CA simplification 1C divide by $1\,000^2$ 1O conclusion OR 1C divide by 1 000 1SF correct substitution 1CA simplification 1O conclusion (4)	M L4 M

Ques	Solution	Explanation	T&L
3.2.1	$\text{Area} = 1,89 \text{ m} \times 1 \text{ m} \checkmark \text{SF}$ $\checkmark \text{A}$ $= 1,89 \text{ m}^2 \checkmark \text{A}$	1SF correct substitution 1A simplification 1A for unit m^2 (3)	M L2 E
3.2.2	Convert to metres = $200 \text{ mm} \div 1\,000 \checkmark \text{C}$ $= 0,2 \text{ m}$ $\checkmark \text{MA}$ $\text{Length} = 10 \text{ m} - (0,2 \text{ m} + 0,2 \text{ m}) = 9,6 \text{ m} \checkmark \text{A}$ $\text{Width} = 4 \text{ m} - (0,2 \text{ m} + 0,2 \text{ m}) = 3,6 \text{ m} \checkmark \text{A}$ $\checkmark \text{MCA}$ $\text{Number of panels (Length)} = \frac{9,6 \text{ m}}{1,89 \text{ m}} = 5,079 \approx 5 \checkmark \text{R}$ $\text{Number of panels (Width)} = \frac{3,6 \text{ m}}{1 \text{ m}} = 3,6 \approx 3 \checkmark \text{R}$ $\checkmark \text{MCA}$ $\text{Total number of panels} = 5 \times 3 = 15 \checkmark \text{CA}$ downloaded from Stanmorephysics.com	1C divide by 1 000 1MA adding 0,2 + 0,2m then subtracting from 10m 1A simplification 1A simplification 1MCA dividing 9,6m by 1,89m 1R correct rounding 1R correct rounding 1MCA multiplying 5 by 3 1CA simplification (9)	M L3 M
3.2.3	$\checkmark \text{MCA}$ $\text{Total weight in tons} = (20 \times 15) \div 1\,000 \checkmark \text{C}$ $= 0,3 \text{ tons} \checkmark \text{CA}$	CA from 3.2.2 1MCA multiply by 15 1C divide by 1 000 1CA simplification (3)	M L2 M
3.2.4	Due to rising electricity costs, solar is a way to reduce monthly electricity bills. $\checkmark \checkmark \text{O}$ OR Solar panels combined with battery storage can provide electricity when the grid is unavailable. $\checkmark \checkmark \text{O}$ OR The country has excellent solar resources, making solar systems well suited to many parts of the country. $\checkmark \checkmark \text{O}$ OR Solar technology has become more affordable in SA. $\checkmark \checkmark \text{O}$ OR Households and businesses can generate some of their own electricity instead of relying entirely on Eskom or municipal electricity. $\checkmark \checkmark \text{O}$ OR Solar power has environmental benefits. There is no burning coal and fossil fuels, helping to reduce greenhouse-gas emissions and decreasing the global carbon footprint. $\checkmark \checkmark \text{O}$	2O correct explanation (2)	M L4 M
		[29]	

QUESTION 4 [32 MARKS]			
Ques	Solution	Explanation	T&L
4.1.1	Height (m) = $(10 \times 0,3048\text{m}) + (6 \times 2,54\text{cm} \div 100)$ = $3,048\text{ m} + 0,1524\text{ m}$ ✓MA = $3,2004\text{m}$ ✓CA OR Height (m) = $(10 \times 0,3048\text{m} \times 100) + (6 \times 2,54\text{cm})$ ✓MA = $304,8\text{ cm} + 15,24\text{ cm}$ ✓MA = $320,04\text{cm} \div 100$ ✓C = $3,2004\text{m}$ ✓CA	1MA multiply by 10 ft 1MA multiply by 6in 1C divide by 100 1MA adding 1CA simplification OR 1MA multiply by 10 ft 1MA multiply by 6inches 1MA adding 1C divide by 100 1CA simplification (5)	M L2 M
4.1.2	Convert to $\text{cm}^3 = 15\,000\ell \times 1\,000$ ✓C = $15\,000\,000\text{ cm}^3$ ✓A Height of tank = $3,2004\text{m} \times 100$ ✓C = $320,04\text{ cm}$ $15\,000\,000\text{ cm}^3 = 3,142 \times r^2 \times 320,04\text{ cm}$ ✓SF $r^2 = 15\,000\,000\text{cm}^3 \div (3,142 \times 320,04\text{cm})$ ✓MA $r = \sqrt{\frac{15\,000\,000}{3,142 \times 320,04}}$ ✓MCA radius = $122,1350764\text{ cm}$ ✓CA $\approx 122,135\text{cm}$ The claim is CORRECT ✓O OR $1\text{m}^3 = 1\,000\text{m}\ell$ ✓C Convert to $\text{cm}^3 = 15\,000\text{m}\ell \div 1\,000 = 15\text{m}^3$ ✓A $15\text{m}^3 = 3,142 \times r^2 \times 3,2004\text{m}$ ✓SF $r^2 = 15\text{ m}^3 \div (3,142 \times 3,2004\text{m})$ ✓MA $r = \sqrt{\frac{15}{3,142 \times 3,2004}}$ ✓MCA radius = $1,221350764\text{m} \times 100$ ✓C = $122,1350764\text{ cm}$ ✓CA $\approx 122,135\text{cm}$ The claim is CORRECT ✓O	CA from Question 4.1.1 1C multiplying by 1 000 1A simplification 1C multiply by 100 1SF correct substitution 1MA changing the subject 1MCA square root 1CA Simplification 1O conclusion OR 1C dividing by 1 000 1A simplification 1SF correct substitution 1MA changing the subject 1MCA square root 1C multiplying by 100 1CA Simplification 1O conclusion	M L4 D

	OR Convert to $\text{cm}^3 = 15\,000 \times 1\,000 \checkmark \text{C}$ $= 15\,000\,000 \text{ cm}^3 \checkmark \text{A}$ Height of tank $= 3,2004\text{m} \times 100 \checkmark \text{C}$ $= 320,04 \text{ cm}$ $\checkmark \text{A}$ Volume $= 3.142 \times (122,135\text{cm})^2 \times 320,04 \text{ cm} \checkmark \text{SF}$ $= 14\,999\,981,241 \text{ cm}^3 \checkmark \text{CA}$ $\checkmark \text{R}$ The volume is approx. $15\,000\,000 \text{ cm}^3$, The claim is CORRECT $\checkmark \text{O}$ OR Height of tank $= 3,2004\text{m} \times 100 \checkmark \text{C}$ $= 320,04 \text{ cm}$ $\checkmark \text{A}$ Volume $= 3.142 \times (122,135\text{cm})^2 \times 320,04 \text{ cm} \checkmark \text{SF}$ $= 14\,999\,981,241 \text{ cm}^3 \checkmark \text{CA}$ $1\,000 \text{ cm}^3 = 1 \ell$ Capacity $= 14\,999\,981,241 \text{ cm}^3 \div 1\,000 \checkmark \text{C}$ $= 14\,999,98 \ell \checkmark \text{CA}$ The capacity is approx. $15\,000 \ell \checkmark \text{R}$ The claim is CORRECT $\checkmark \text{O}$	OR 1C multiplying by 1000 1A Simplification 1C multiplying by 100 1A correct radius 1SF correct substitution 1CA Simplification 1R correct rounding 1 O conclusion OR 1C multiplying by 100 1A correct radius 1SF correct substitution 1CA Simplification 1C dividing by 1 000 1CA Simplification 1R correct rounding 1O conclusion (8)	
4.1.3	$\checkmark \text{RT}$ $1,70\text{m} : 3,2004\text{m} \checkmark \text{CA}$ $1 : 1,88 \checkmark \text{R}$ OR $\checkmark \text{RT}$ $170\text{cm} : 320,04\text{cm} \checkmark \text{CA}$ $1 : 1,88 \checkmark \text{R}$	CA from Question 4.1.1 1RT comparison in correct order 1CA height of the tank 1R correct rounding OR 1RT comparison in correct order 1CA height of the tank 1R correct rounding (3)	MP L2 M
4.1.4	The man is used in the advert as a visual reference point because people can easily relate to the height and size of a person. $\checkmark \checkmark \text{O}$ OR By comparing the man to the tank, potential customers can better judge the tank's actual size. $\checkmark \checkmark \text{O}$ OR This visual comparison makes it easier for customers to understand how high the tank is and whether it will be suitable for their water storage needs. $\checkmark \checkmark \text{O}$	2O correct explanation (2)	MP L4 E

4.2.1	✓C Convert height to cm = $122\text{mm} \div 10 = 12,2\text{cm}$ Convert diameter to cm = $66,2\text{mm} \div 10 = 6,62\text{cm}$ ✓A Radius = $6,62\text{cm} \div 2$ ✓MCA $= 3,31\text{cm}$ ✓CA Surface Area of an open cylinder ✓MA ✓SF $= 3,142 \times (3,31\text{cm})^2 + (2 \times 3,142 \times 3,31\text{cm} \times 12,2\text{cm})$ $= 288,1845 \dots \text{cm}^2$ $\approx 289\text{cm}^2$ ✓R OR Radius = $66,2\text{mm} \div 2$ ✓MA $= 33,1\text{mm}$ ✓A Surface Area of an open cylinder ✓MA ✓SF $= 3,142 \times (33,1\text{mm})^2 + (2 \times 3,142 \times 33,1\text{mm} \times 122\text{mm})$ ✓A $= 28818,4554 \dots \text{mm}^2 \div 10^2$ ✓C $= 288,184 \dots \text{cm}^2$ $\approx 289\text{cm}^2$ ✓R OR	1C divide height by 10 1A simplification 1MCA divide diameter by 2 1CA simplification 1MA open cylinder formula 1SF correct substitution 1R correct rounding OR 1MA divide diameter by 2 1A simplification 1MA open cylinder formula 1SF correct substitution 1A simplification 1C divide by 10^2 1R correct rounding OR	M L2 M
	✓C Convert height to cm = $122\text{mm} \div 10 = 12,2\text{cm}$ Convert diameter to cm = $66,2\text{mm} \div 10 = 6,62\text{cm}$ ✓A Radius = $6,62\text{cm} \div 2$ ✓MCA $= 3,31\text{cm}$ ✓CA Surface Area of an open cylinder ✓SF ✓MA $= 2 \times 3,142 \times (3,31\text{cm})^2 + (2 \times 3,142 \times 3,31\text{cm} \times 12,2\text{cm})$ $- (3,142 \times (3,31\text{cm})^2)$ ✓MA $= 288,184 \dots \text{cm}^2$ $\approx 289\text{cm}^2$ ✓R OR	1C divide height by 10 1A simplification 1MCA divide diameter by 2 1CA simplification 1SF correct substitution 1MA subtract for open cylinder formula 1R correct rounding OR	

	Radius = $66,2\text{mm} \div 2$ ✓MA = $33,1\text{mm}$ ✓A Surface Area of an open cylinder ✓SF = $2 \times 3,142 \times (33,1\text{mm})^2 + (2 \times 3,142 \times 33,1\text{mm} \times 122\text{mm})$ = $(3,142 \times (33,1\text{mm})^2)$ ✓MA ✓CA = $28818,4554... \text{mm}^2 \div 10^2$ ✓C = $288,184... \text{cm}^2$ $\approx 289\text{cm}^2$ ✓R	1MA divide diameter by 2 1A simplification 1SF correct substitution 1MA open cylinder formula 1CA simplification 1C divide height by 10^2 1R correct rounding (7)	
4.2.2	500ml = 0,5ℓ ✓MA Total Surface Area = $289\text{cm}^2 \times 2 \times 25$ ✓MA = $14\,450\text{cm}^2$ ✓CA Total SA in $\text{m}^2 = 14\,450\text{cm}^2 \div 100^2$ ✓C = $1,445\text{m}^2$ Number of litres = $\frac{1,445}{5}$ ✓MCA = $0,289\ell$ ✓CA $0,289\ell < 0,5\ell$ OR $289\text{ml} < 500\text{ml}$ Her Claim is CORRECT. ✓O OR	CA from Question 4.2.1 1MA multiplying by 2 1MA multiply by 25 1CA simplification 1C divide by 100^2 1MCA divide by 5ℓ 1CA simplification 1O conclusion	M L4 M

Convert SA to $\text{m}^2 = 289\text{cm}^2 \div 100^2 = 0,0289\text{m}^2$ ✓A ✓MA Total Surface Area = $0,0289\text{m}^2 \times 2 \times 25$ ✓MA = $1,445\text{m}^2$ ✓CA Number of litres = $\frac{1,445}{5}$ ✓MCA = $0,289\text{l}$ ✓CA $0,289\text{ l} < 0,5\text{l}$ OR $289\text{ml} < 500\text{ml}$ Her Claim is CORRECT. ✓O OR ✓MA Total Surface Area = $289\text{cm}^2 \times 2 \times 25$ ✓MA = $14\,450\text{cm}^2$ ✓CA Number of litres = $\frac{14\,450}{5 \times 100^2}$ ✓MCA ✓C = $0,289\text{l}$ ✓CA $0,289\text{ l} < 0,5\text{l}$ OR $289\text{ml} < 500\text{ml}$ Her Claim is CORRECT. ✓O	1A correct SA 1MA multiplying by 2 1MA multiply by 25 1CA simplification 1MCA divide by 5l 1CA simplification 1O conclusion OR 1MA multiplying by 2 1MA multiply by 25 1CA simplification 1MCA divide by 5l 1C divide by 100^2 1CA simplification 1O conclusion (7)	[32]

QUESTION 5 [30 MARKS]			
Ques	Solution	Explanation	T&L
5.1	11 June to 30 June = 20 days ✓A 1 July to 19 July = 19 days Number of days = 20 + 19 ✓MA = 39 ✓CA	1A for 20 days 1MA adding both days 1CA simplification AO (3)	MP L2 M
5.2	$\text{Probability (Mexico Stadium)} = \frac{3}{16}$ ✓A ✓A = 0,1875 ✓CA	1A for numerator 1A for denominator 1CA simplification (3)	P L2 M
5.3	Line/linear/bar/graphic scale ✓RT ✓A ✓RT 1,9cm on the map represents 400 miles in reality OR ✓A ✓RT 19mm on the map represents 400 miles in reality	1RT correct type of scale 1A correct measurement 1RT correct scale value in miles (3)	MP L2 E
5.4	Map distance = 13,2cm ✓A $\text{Number of miles} = \frac{400 \times 13,2\text{cm}}{1,9\text{cm}}$ ✓MCA ✓MA = 2 778,947368 miles ✓CA Number of km = 2 778,947368 miles × 1,609 ✓C = 4 471,3263 ...km ✓CA 4 711km > 4 471,33km The claim is NOT CORRECT/INCORRECT. ✓O OR Map distance = 132mm ✓A $\text{Number of miles} = \frac{400 \times 132\text{mm}}{19\text{mm}}$ ✓MCA ✓MA = 2 778,947368 miles ✓CA Number of km = 2 778,947368 miles × 1,609 ✓C = 4 471,3263 ...km ✓CA 4 711km > 4 471,33km The claim is NOT CORRECT/INCORRECT. ✓O	1A measured distance 13,2cm on the map 1MCA multiplying 13,2cm by 400 1MA dividing by 1,9cm 1CA simplification 1C multiply by 1,609 1CA simplification 1O conclusion OR 1A measured distance 132mm on the map 1MCA multiplying 132mm by 400 1MA dividing by 19mm 1CA simplification 1C multiply by 1,609 1CA simplification 1O conclusion	MP L3 M

	OR Map distance = 13,2cm ✓A Number of km (scale) = 400 miles × 1,609 ✓C = 643,6km ✓A ✓MCA Number of km (map) = $\frac{643,6\text{km} \times 13,2\text{cm}}{1,9\text{cm}}$ ✓MA = 4 471,3263 ...km ✓CA 4 711km > 4 471,33km The claim is NOT CORRECT/INCORRECT. ✓O OR Map distance = 132mm ✓A Number of km (scale) = 400 miles × 1,609 ✓C = 643,6km ✓A ✓MCA Number of km (map) = $\frac{643,6\text{km} \times 132\text{mm}}{19\text{mm}}$ ✓MA = 4 471,3263 ...km ✓CA 4 711km > 4 471,33km The claim is NOT CORRECT/INCORRECT. ✓O	OR 1A measured distance 13,2cm on the map 1C multiply by 1,609 1A simplification 1MCA multiplying 13,2cm by 643,6km 1MA dividing by 1,9cm 1CA simplification 1O conclusion OR 1A measured distance 132mm on the map 1C multiply by 1,609 1A simplification 1MCA multiplying 132mm by 643,6km 1MA dividing by 19mm 1CA simplification 1O conclusion Accept a leeway of 1mm (7)	
5.5	✓C Time in hours = $5 + \frac{30\text{min}}{60\text{min}} = 5,5$ hours Speed by plane = $\frac{4\,120\text{ km}}{5,5\text{ hours}}$ ✓MA = 749,09 km/h ✓CA Speed by car = $\frac{4\,680\text{ km}}{43\text{ hours}}$ ✓MA = 108,84 km/h Number of times faster = 749,09 km/h ÷ 108,84 km/h ✓MCA = 6,88 ... times ✓CA The claim is INCORRECT/NOT CORRECT ✓O OR	1C divide by 60min 1MA dividing by 5,5h 1CA simplification 1MA dividing by 43h 1MCA divide by 108,84 1CA simplification 1O conclusion OR	MP L4 M

	Time in hours = $5 + \frac{30min}{60min} = 5,5$ hours ✓C Speed by plane = $\frac{4\,120\,km}{5,5\,hours}$ ✓MA = 749,09 km/h ✓CA Speed by car = $\frac{4\,680\,km}{43\,hours}$ ✓MA = 108,84 km/h ✓MCA Car Speed (7 times) = $108,84 \times 7 = 761,88$ km/h ✓CA 749,09 km/h < 761,88 km/h The claim is INCORRECT/NOT CORRECT ✓O OR Time in hours = $5 + \frac{30min}{60min} = 5,5$ hours ✓C Speed by plane = $\frac{4\,120\,km}{5,5\,hours}$ ✓MA = 749,09 km/h ✓CA Speed by car = $\frac{4\,680\,km}{43\,hours}$ ✓MA = 108,84 km/h ✓MCA Car Speed (7 times) = $749,09 \div 7 = 107,0128\dots$ km/h ✓CA 107,0128 km/h < 108,84 km/h The claim is INCORRECT/NOT CORRECT ✓O	1C divide by 60min 1MA dividing by 5,5h 1CA simplification 1MA dividing by 43h 1MCA multiply 108,84 by 7 1CA simplification 1O conclusion OR 1C divide by 60min 1MA dividing by 5,5h 1CA simplification 1MA dividing by 43h 1MCA multiply 108,84 by 7 1CA simplification 1O conclusion (7)	
5.6	$32^{\circ}C = \frac{5}{9} \times (^{\circ}F - 32)$ ✓SF $^{\circ}F = (32^{\circ}C \times \frac{9}{5}) + 32$ ✓MA $^{\circ}F = 57,6 + 32$ ✓MA $^{\circ}F = 89,6$ ✓CA $^{\circ}F \approx 90$ ✓R	1SF correct substitution 1MA change subject of formula 1MA adding 57,6 1CA simplification 1R rounding (5)	M L2 M

5.7	Los Angeles, Dallas and Miami are far apart, so travelling between the cities will take considerable time. ✓✓O OR The supporter must allow enough time to travel from one host city to the next before the next match. ✓✓O OR Flights or other forms of transport would need to be booked in advance. ✓✓O OR The supporter would need to consider the dates and times of the matches when planning each journey. ✓✓O OR Flight delays, transport demands, traffic or other disruptions could affect the travel schedule. ✓✓O	20	correct explanation	MP L4 M
			(2)	
			[30]	

TOTAL MARKS: 150

ANALYSIS GRID OF COGNITIVE LEVELS MATHS LIT P2 PREPARATORY EXAMINATION 2026 – GRADE 12

		MEAS	MPW	P	L1	L2	L3	L4		
Ques	Sub Ques	55%	40%	5%	30%	30%	20%	20%	Tot subq	Total Que
1	1.1.1	2			2				2	30
	1.1.2		2		2				2	
	1.1.3			2	2				2	
	1.1.4		2		2				2	
	1.1.5	2			2				2	
	1.2.1	2			2				2	
	1.2.2	2			2				2	
	1.2.3	3			3				3	
	1.2.4	2			2				2	
	1.2.5	3			3				3	
	1.3.1		2		2				2	
	1.3.2		2		2				2	
	1.3.3		2		2				2	
	1.3.4		2		2				2	
2	2.1.1		2		2				2	29
	2.1.2		2		2				2	
	2.1.3		4				4		4	
	2.1.4		2		2				2	
	2.2.1		4			4			4	
	2.2.2			3		3			3	
	2.2.3		2		2				2	
	2.3.1		2		2				2	
	2.3.2		2		2				2	
	2.3.3		2		2				2	
	2.3.4		4				4		4	
3	3.1.1	5				5			5	29
	3.1.2	3				3			3	
	3.1.3	4						4	4	
	3.2.1	3				3			3	
	3.2.2	9					9		9	
	3.2.3	3				3			3	
	3.2.4	2						2	2	

4	4.1.1	5				5			5	32
	4.1.2	8						8	8	
	4.1.3		3			3			3	
	4.1.4		2					2	2	
	4.2.1	7					7		7	
	4.2.2	7						7	7	
5	5.1		3			3			3	
	5.2			3		3			3	
	5.3		3			3			3	
	5.4		7				7		7	
	5.5		7					7	7	
	5.6	5				5			5	
	5.7		2					2	2	
	ACTUAL	77	65	8	44	43	27	36	150	30
	REQUIRED	82	60	8	45	45	30	30	150	150



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