KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

Stanmorephysics.com

MATHEMATICAL LITERACY P2

COMMON TEST

JUNE 2023

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MARKS: 100

TIME: 2 hours

This question paper consists of 10 pages.

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

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QUESTION 1

1.1

The map of the Gautrain route and the Metrorail stations are given below.

MAP OF GAUTRAIN ROUTE



[Source:www.johannesburg-airport.com]

Use the map of the Gautrain above to answer the questions that follow.

1.1.1 Identify the type of map shown above. (2)

1.1.2 Determine how many train routes to OR Tambo airport are shown on the map. (2)

1.1.3 Which direction is OR Tambo airport from Hatfield Metrorail. (2)

1.1.4 Determine the number of trains stops on the longest route. (2)

1.1.5 Which metro rail stations are on the direct route to OR Tambo airport (3)

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1.2 An extract of the Weekday Gautrain timetable is shown in TABLE 1 below.

TABLE 1: WEEKDAY GAUTRAIN TIMETABLE

Peak period – 05:30 to 8:30			
Departure OR Tambo	**Arrival Rhodes Field**	**Arrival Marlboro**	**Arrival Sandton**
05:30	**05:32**	**05:39**	**05:43**
05:42	**05:44**	**05:51**	**05:55**
05:54	**05:56**	**06:03**	**06:07**
06:06	**06:08**	**06:15**	**06:19**

[Adapted source:www.searchnetworxbusiness.com]

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Use the information in TABLE 1 above to answer the questions that follow.

1.2.1 Explain the term *peak period*. (2)

1.2.2 Identify the time format given in TABLE 1 above. (2)

1.2.3 Determine how often, in minutes, a train departs from OR Tambo airport. (2)

1.2.4 Determine the time taken to travel from Rhodesfield to Sandton. (3)

1.2.5 Convert the time from Question 1.2.4 to seconds. (2)

[22]

QUESTION 2

2.1 Distances from various cities in South Africa are shown below.

George												
773	Bloemfontein											
438	1004	Cape Town										
1319	634	1753	Durban									
645	584	1079	674	East London								
465	601	899	854	180	Grahamstown							
1171	398	1402	578	982	999	Johannesburg						
762	177	962	811	780	667	472	Kimberly					
1183	410	1431	236	752	932	356	587	Ladysmith				
1203	464	1343	821	1048	1065	287	380	597	Mafikeng			
335	677	769	984	310	130	1075	743	1062	1548	Port Elizabeth		
880	570	1314	439	235	415	869	747	517	1003	545	Umtata	
926	153	1156	564	737	754	258	294	340	451	830	718	Welkom
1701	928	1932	1118	1512	1529	530	1002	894	808	1605	1403	788	Messina

[Source: http://pattayathailand.ru/]

Use the information above to answer the questions that follow.

2.1.1 Identify the type of chart shown above. (2)

2.1.2 The chart above shows the shortest distance between two cities.
Name the type of road that would connect cities in different provinces. (2)

2.1.3 Name one advantage of using this type of road from Question 2.1.2 instead of a regional road. (2)

2.1.4 Determine the distance between Port Elizabeth and Cape Town. (2)

2.1.5 Determine the difference in the distance of a trip from Johannesburg to Cape Town compared from Durban to Cape Town. (3)

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2.2 A map of South Africa is shown below.



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

Use the map above and the chart in Question 2.1 to answer the questions that follow.

2.2.1 Identify the type of scale shown on the map above. (2)

2.2.2 Measure the scale. Explain in words what the scale represents. (4)

2.2.3 Use the scale on the map to determine the actual distance from Pretoria to Cape Town in km. (4)

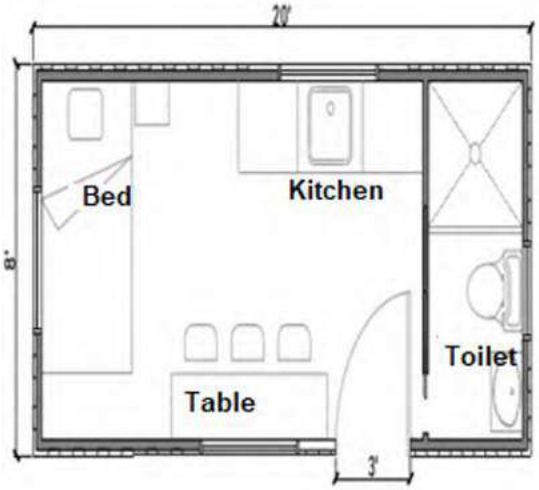
2.2.4 If a map is resized, identify the type of scale that is more accurate.
Give a reason for your answer. (4)

[25]

QUESTION 3

3.1

Shipping containers can be used for housing and provides a cost-effective alternative to traditional houses.

Shipping Container	Floor Plan of a Container House
	
Dimensions of the container: Width = 8 feet Height = 8.5 feet Length = 20 feet	**Dimensions of the toilet**: Width = 3.9 feet Length = 7.4 feet

NOTE: 1 foot = 0.3048 metres

[Source: https://targetbox.ca/]

Use the image and floor plan above to answer the questions that follow

3.1.1 A statement was made that the living area, excluding the toilet. should be approximately 15m^2.

Verify, using calculations if this statement is CORRECT.

You may use the formula:

Area = length × width (8)

3.1.2 The container must be painted. Calculate the surface area of the container (in m^2), excluding the underneath.

You may use the formula:

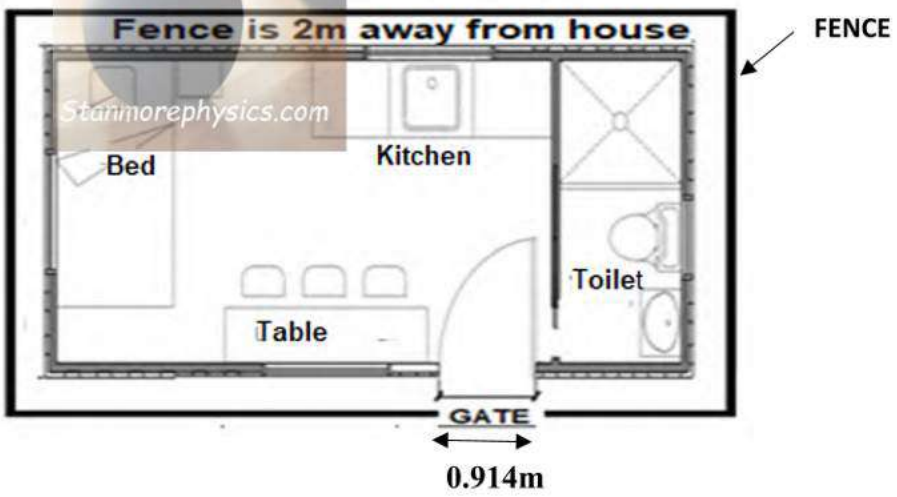
SA = 2(L×H)+ 2(W×H)+ 2(L×W) (4)

3.1.3 The contractor stated that he will buy 15 litres of paints.
The container needs two coats of paint. One litre of paint covers $8m^2$.

Verify, using calculations that quantity of paint that must be bought is CORRECT. (5)

3.2

A fence is installed around the container house. The fence is 2 metres away all-round the house. A gate, 0.914m wide, is used to gain access to the house.



NB: Drawing is not drawn to scale

Use the diagram above and the dimensions given in Question 3.1 to answer the questions that follow.

3.2.1 Verify, using calculations, if the total length of fencing required to fence the house is more than 30 metres.

You may use the formula:

Perimeter = 2 (L) + 2 (W) (5)

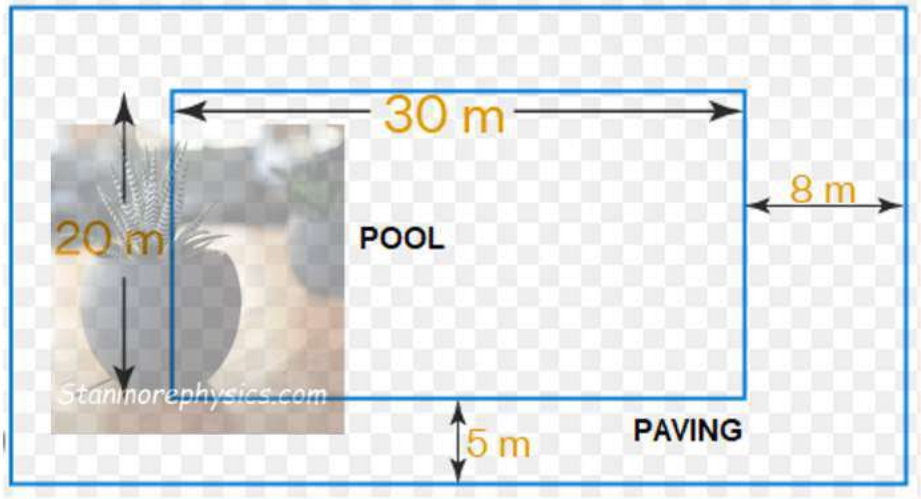
3.2.2 Fencing is sold in 3000 mm lengths. Determine the total number of fencing lengths that must be bought. (6)

3.2.3 Determine the length of the gate in yards, if 1m = 1,094yards. (2)

[30]

QUESTION 4

4.1 The diagram below shows a swimming pool that is surrounded by paving.



NOTE: $1m^3 = 1000$ litres

[Source:www. donut.com]

Use the information above to answer the questions that follow.

4.1.1 The capacity of the pool is 810 000 litres. Calculate the depth of the pool.

You may use the following formula:

Volume of a rectangular prism = l × b × h (5)

4.1.2 Determine the area of the paving around the pool.

You may use the following formula:

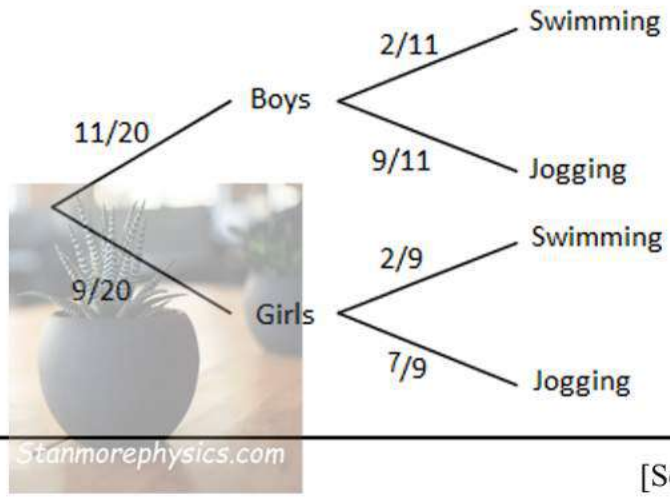
Area = length × width (8)

.

4.1.3 Measure the length of the pool and determine the number scale used to draw the pool. (5)

4.2

The tree diagram below shows boys and girls who prefers swimming to jogging.



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[Source:www.study.com]

Use the diagram above and answer the question that follows.

4.2.1 Determine the total number of boys and girls. (2)

4.2.2 Determine the probability, as a decimal, that a boy would prefer swimming. (3)

[23]

TOTAL [100]