Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

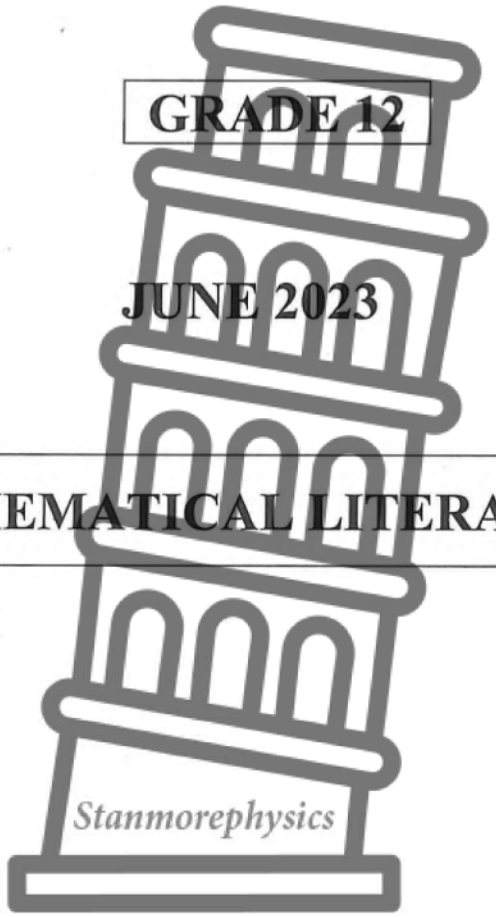
GRADE 12

JUNE 2023

MATHEMATICAL LITERACY P2

MARKS: 100

TIME: 2 hours



JMLITE2

This question paper consists of 8 pages and an addendum with 2 annexures.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ADDENDUM with ANNEXURES for the following questions:

   ANNEXURE A for QUESTION 2.2
   ANNEXURE B for QUESTION 4.1
3. Number the questions correctly according to the numbering system used in this question paper.
4. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
5. Show ALL calculations clearly.
6. Maps and diagrams are NOT drawn to scale, unless otherwise stated.
7. Indicate units of measurement, where applicable.
8. Round off ALL final answers appropriately accordingly to the given context, unless stated otherwise.
9. Start EACH question on a NEW page.
10. Write neatly and legibly.

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QUESTION 1

1.1 Mavis is traveling from Pretoria to Durban. She prepares scones for her trip using a recipe with ingredients and quantities for 8 scones as shown below.

INGREDIENTS FOR SCONES

360 g	Flour
90 g	Butter
5	Teaspoons of baking powder
0,5	Teaspoons of salt
0,5	Cup of white sugar
1	Egg, beaten

NOTE: Preparation time: 12 minutes
Baking time: 15 minutes

[Adapted from **www.allrecipes.com**]

1.1.1 What is the total amount of flour and butter in kg? (3)

1.1.2 Express the butter to flour as a ratio in a simplified form. (2)

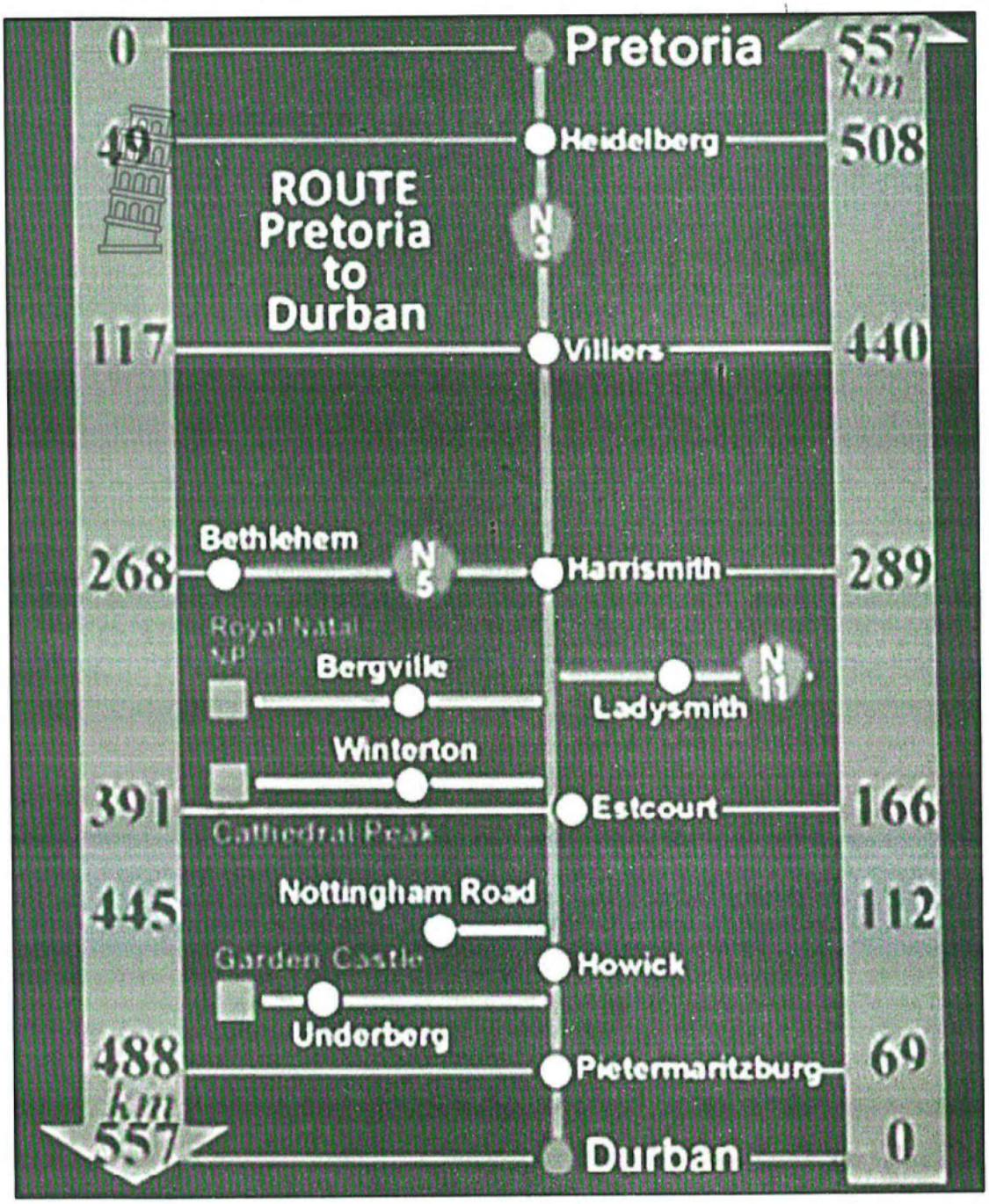
1.1.3 Write down the total number of teaspoons baking powder and salt to the nearest whole number. (2)

1.1.4 Write down the total preparation and baking time in hours. (3)

1.1.5 Determine the amount of butter required to make 24 scones. (3)

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1.2 Below is a map showing the route between Pretoria and Durban. Answer the questions based on the map below.



1.2.1 Name the towns between Harrismith and Pretoria on the N3 road. (2)

1.2.2 How many national roads are on the map? (2)

1.2.3 What is the main difference between this map and other kinds of maps? (2)

1.2.4 What is the distance between Villiers and Pietermaritzburg in kilometres (km)? (2)

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QUESTION 2

2.1 The distance map below is showing distances (in km) between some towns and gates at the Kruger National Park. Answer the questions based on the distance map below.

DISTANCE CHART
(Distance in Kms)

	Barberton	eMakhazeni (Belfast)	Crocodile Bridge Gate	Dullstroom	Graskop	Hazyview	Hoedspruit	Johannesburg	Komatipoort	Kruger Gate	Mashishing (Lydenburg)	Malelane Gate	Mbombela (Nelspruit)	Phalaborwa Gate	Pretoria	Sabie	Skukuza	Tzaneen	White River
Barberton																			
eMakhazeni (Belfast)	170																		
Crocodile Bridge Gate	131	243																	
Dullstroom	205	36	277																
Graskop	136	170	171	128															
Hazyview	102	177	132	165	40														
Hoedspruit	198	232	216	189	105	96													
Johannesburg	388	222	461	257	388	395	449												
Komatipoort	118	232	14	266	187	148	243	450											
Kruger Gate	144	219	94	207	80	42	123	436	109										
Mashishing (Lydenburg)	170	98	243	55	72	110	134	315	230	151									
Malelane Gate	78	192	58	230	150	111	207	409	46	75	195								
Mbombela (Nelspruit)	46	127	117	162	91	58	153	344	105	99	127	68							
Phalaborwa Gate	266	279	284	236	172	164	70	526	310	191	181	274	221						
Pretoria	366	199	438	234	365	372	426	62	426	413	293	390	322	469					
Sabie	108	154	176	146	28	46	130	371	163	88	88	127	63	198	348				
Skukuza	145	231	80	219	93	55	139	449	96	16	164	65	112	207	426	101			
Tzaneen	304	285	323	243	188	203	116	417	349	230	188	313	260	112	359	218	245		
White River	64	139	128	174	75	38	134	356	116	80	138	79	19	202	333	48	92	241	

2.1.1 What is the distance in metres between Tzaneen and Johannesburg? (3)

2.1.2 Mr Smith claims that the difference in the distance between Malelane Gate and Phalaborwa Gate and the distance between Crocodile Bridge Gate and Kruger Gate is 180 km. With calculations prove whether his statement is valid or not. (5)

2.1.3 What is the shortest distance shown in this map in km. (2)

2.2 ANNEXURE A represents the Two Oceans Half Marathon route which is a distance of 21,1 km.

Use ANNEXURE A to answer the following questions.

2.2.1 If Kenilworth is south from Claremont, what is the compass direction from Diep River to Claremont? (2)

2.2.2 One of the marathon runners claims that the refreshments stations are two times the number of medical stations. With calculations prove whether this statement is valid or not. (4)

2.2.3 Identify on the elevation map which are the highest points in kilometres (km). (2)

2.2.4 One marathon runner completed the marathon in 3 hours 45 minutes. Calculate his run rate in kilometres per hour (kmh). Give your answer rounded to TWO decimal places. (4)

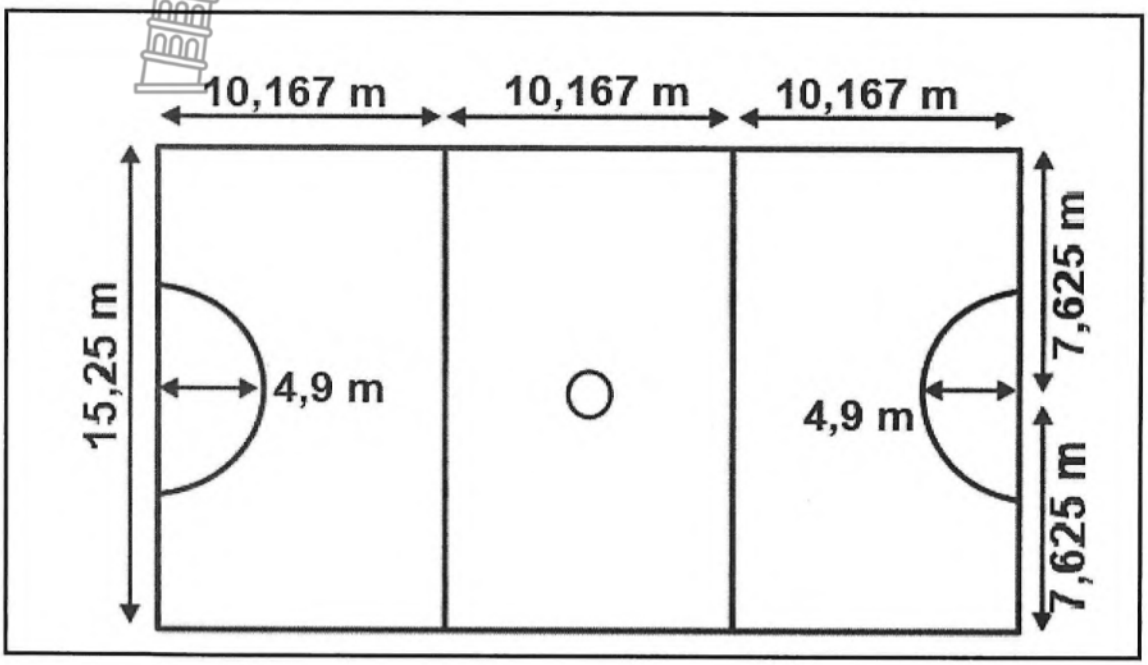
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QUESTION 3

3.1 Netball is a popular sport in almost all schools in the Eastern Cape. It is also an international sport and South Africa will be hosting the Netball World Cup Tournament in July 2023. Below is a netball court with dimensions.

NOTE: The centre circle has a diameter of 0,9 m.



3.1.1 Determine the perimeter of the netball court in metre (m). (3)

3.1.2 Calculate the radius of the centre circle in centimetre (cm), if its diameter is 0,9 m. (3)

3.1.3 Calculate the area of the whole court, excluding the two goal circles (semi-circles) and the (centre circle) in m^2.

You may use the following formulas:

Area of rectangle = length x width
Are of circle = πr^2
Where r is radius and π = 3,142 (7)

3.1.4 In a school there are two netball courts, each with a surface of 465 14 m^2 which need to be painted using water resistant non-slip paint. Two coats of paint is needed and 1 litre of paint covers 8 m^2. Calculate how many tins of paint will be needed if paint is sold in 20 litre tins. (6)

3.1.5 Paint costs R1 500 per 20 litre tin (VAT included). Labour for painting is R150 per hour and part of it. The painter finishes the job in 23,5 hours.
The sportsmaster of this school claims that R15 000 will be enough to cover all painting costs. Verify, with calculations, whether his claim is valid. (6)

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3.2 3.2.1 A professional netball match is divided ino four quarters of 15 minutes each. There is a 4 minute interval between quarter 1 and 2 and another 4 minute interval between quarters 3 and 4. There is an additional half time interval of 12 minutes between quarters 2 and 3. If a match starts at 8:30, at what time will this match finish? (4)

3.2.2 What is the probability of a netball player playing on a triangular quarter of the netball court? (2)

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QUESTION 4

4.1 ANNEXURE B represents a South African map. Answer the questions below based on the annexure.

4.1.1 Name the two oceans on the map. (2)

4.1.2 What type of scale is shown on the map? (2)

4.1.3 Use the scale to calculate the actual distance in kilometre (km) between Bloemfontein and Messina, to the nearest kilometre. (4)

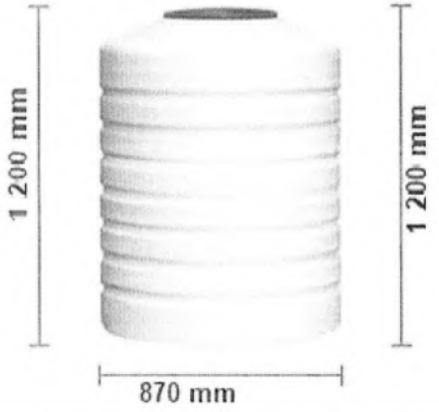
4.1.4 What is the probability, as a percentage, of being in a country which is neither South Africa, nor Lesotho, from all the countries in the map? (3)

4.2 A family from Bloemfontein visits Messina. They leave Bloemfontein at 7:45 driving at an average speed of 110 km per hour. On their way they have two breaks of 35 minutes each. Calculate at what time will they arrive at their destination.

You may use the formula: **Distance = Speed x Time** (6)

4.3 Jojo water tanks are used to collect rain water.

Dimensions for the water tank: **Height = 1 200 mm**
Diameter = 870 mm



4.3.1 In most areas people use water tanks to collect rain water. Mr Smith has a water tank which is 1 200 mm high, with a volume of 713 453 940 mm^3. Show how this volume was calculated if this tank has a diameter of 870 mm.

You may use the formula: **Volume = 3,142 x radius^2 x height** (3)

4.3.2 Convert the volume of the tank to litres. Round your answer to the nearest litre.

Given: **1 litre = 1 000 000 mm^3** (3)

4.3.3 What is the diameter of the tank in inches if 1 inch = 2,54 cm? Give your answer rounded off to TWO decimals. (3)

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TOTAL: 100

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