Education and Sport Development

Department of Education and Sport Development
Departement van Onderwys en Sport Ontwikkeling
Lefapha la Thuto le Tlhabololo ya Metshameko
NORTH WEST PROVINCE

NATIONAL SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY PAPER 1
JUNE EXAM 2018

MARKS: 75

TIME: 1, 5 hours

This question paper consist of 9 pages including an annexure and an answer sheet

NW/JUNE/MATLIT/ EMIS/6*******

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.

2. Use ANNEXURE to answer QUESTION 4.2 and the ANSWER SHEET to answer QUESTION 2.4.

3. Number the answers correctly according to the numbering system used in the question paper.

4. ALL the calculations must be clearly shown.

5. An approved calculator (non- programmable and non- graphical) may be used, unless stated otherwise.

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.

QUESTION 1

1.1

Mrs Olifant intends to bake muffins using the muffin mixture below.

1.1.1 Convert 500g, the mass of the muffin mixture to kg. (2)

1.1.2 If one cup of oil 250ml and the recipe needs $\frac{2}{3}$ cup, how many ml of oil is needed. Round off your answer to the nearest whole number (3)

1.1.3 The packet indicates that 12 large muffins can be baked using this mixture. Calculate the total number of muffins that can be baked using two packets. (2)

1.2 The table below shows the cost of parking in a certain town.

Number of hours	**Cost**
0 to 1 hour	FREE
Between 1and 3 hours	R 4,00
Between 3 and 5 hours	R 6,00
Between 5 and7 hours	R 8,00
Between 7 and 9	R 10,00
From 9 hours	R 12,00
Saturdays before 13:00	R 5,00
Sunday and public holidays	FREE

Use the table above to answer the questions that follow.

1.2.1 Write down two time slots during which parking will be for free. (2)

1.2.2 Calculate the total time spend at this parking lot, if the owner of a car parked from 8: 45 to 13:25. (3)

1.2.3 Determine the amount that the owner of the car will pay will pay for parking. (2)

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QUESTION 2

2.1

The youth of Rantsheng township are planning to hold their annual conference in June. They have arranged to use the civic Centre in the township. A basic fee of R2 400 will be charged for decorations and an additional fee of R50, 00 per person will be charged.

The table below shows the cost of using the civic centre.

TABLE1: Cost of using the civic centre

Number of people	0	10	20	40	50	100
Cost (R)	2400	2900	**A**	4400	4900	7400

They will also raise funds during this conference by selling raffle tickets. The tickets will be sold at R 130, 00 each.

The table below shows the income of selling the raffle tickets.

TABLE 2: Income from selling the raffle tickets

Number of people	0	10	20	40	**B**	100
Cost (R)	0	1300	2600	5200	10400	13000

Use table1and 2 and the information above to answer the questions that follow.

2.1 Write down the formula for calculating the total cost of using the civic centre. (2)

2.2 Use the formula to calculate the value of **A**. (2)

2.3 Use the formula I= R130, 00 × n to calculate the value of **B**. (2)

2.4 Use table 1and 2 to draw two line graphs on the same set of axis on the answer sheet provided. Clearly label the graph cost. (8)

2 .5 How many tickets must the youth sell in order to breakeven (2)

[16]

QUESTION 3

3.1

Katlego has an account with a clothing store.

KATLEGO TSATSI **PO Box 1496** **Zeerust** **2865**			**Instalment R200, 00** **Over due** **Total due R200, 00**
Date 09/11/2016			**Due date 08/12/2016**
		Amount	**Balance**
	Opening balance		**R1000, 61**
08/11/2016	**Interest**	**R23,73**	**R1024, 34**
08/11/2016	**ATM payment**	**R200, 00**	**R824, 34**
09/11/2016	**Account protection plan**	**R20, 56**	**R844, 90**
09/11/2016	**Lifestyle magazine**	**R25, 00**	**R869, 90**

Use the statement above to answer the questions that follow.

3.1.1. Write down the opening balance of the account. (2)

3.1.2 How much did Katlego pay for this month? (2)

3.1.3. Which deduction on this account is a not necessity? (2)

3.1.4. Determine the interest as a percentage of the opening balance. (2)

3.2 Katlego borrows R13 500, 00 at 12% interest compounded monthly. How much will he pay at the end of 3 months ? (5)

3.3 The municipality in which Katlego lives charges monthly tariffs for water according to the sliding scale shown below. Use the scale to answer questions that follow.

Water Usage	**Rate per kilo**
0 - 6 kl	Nil
6 – 12 kl	R18, 04
12 – 18 kl	R10, 55
18 – 24 kl	R12, 21
24 – 30 kl	R13, 95
30 – 42 kl	R15, 08
42 – 72 kl	R16, 08
More than 72kl	R17, 28

3.3.1. Calculate the cost if Katlego uses 27 kl of water. (5)

3.3.2. The municipality also charges R44, 82 for refuse removal. The amount was increased by 17%. Calculate the new charge. (2)

3.4 Katlego earns R25 000, 00 per month in the department in which he works. Calculate how much he would earn if he was working in a country which pays in pounds. (Exchange rate **R1, 00 = £ 16, 93**) (3)

[23]

QUESTION 4

4.1

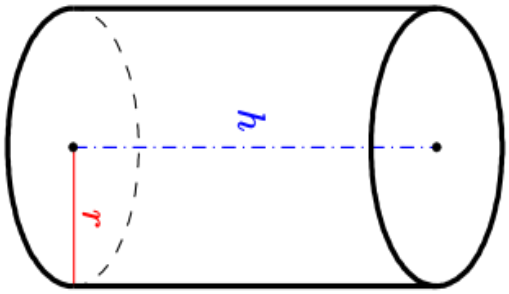
The grade 11 learners of Sphola secondary are planning to start a vegetable garden. They will use a tank to store water for irrigation. The tank is 2,5m long and its diameter is 150cm.

The following formulae and the conversion may be used:

Volume $= \pi r^2 h$

Surface Area $= 2\pi r(r + h)$, where $\pi = 3,142$

1000cm^3 = 1litre



4.1.1 Determine the radius of the water tank. (2)

4.1.2 Calculate the volume of water in litres (to two decimal places) when the tank is full. (5)

4.1.3 Calculate the surface area (to the nearest m^2). (4)

4.2 The ANNEXURE shows the map of the Ultra marathon. Use the annexure to answer the questions that follow.

4.2.1 Write the total number of the medical stations and the refreshments stations on the map. (4)

4.2.2 How many kilometres would an athlete have completed at the 17th refreshment station. (2)

4.2.3 At what point will this marathon end. (2)

4.2.4 The winner of this 56 km marathon completed the race in 3 hours and 15 minutes. Calculate his average speed. (4

You may use the following formula

Speed $= \frac{Distance}{Time}$

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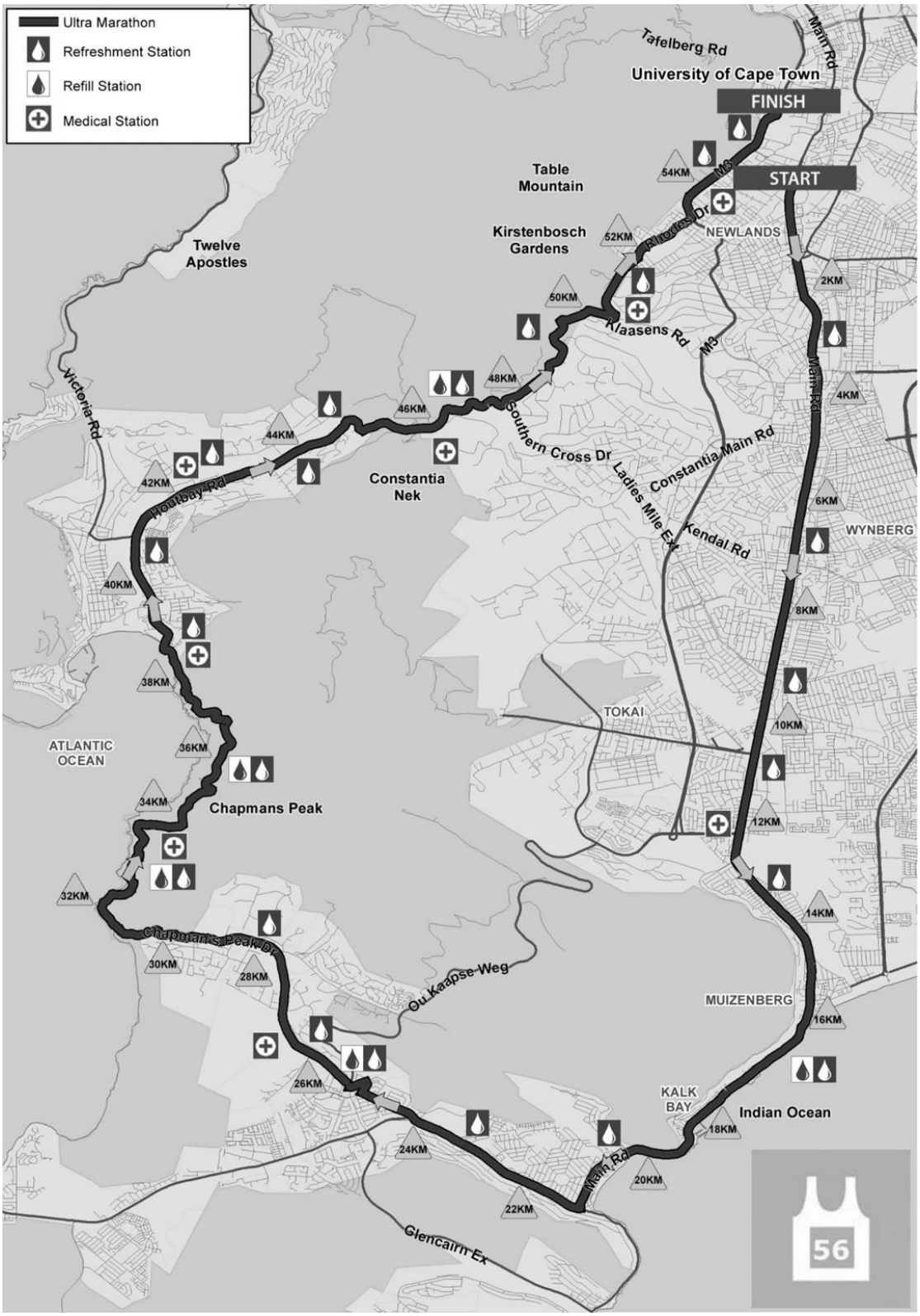
ANNEXURE:


Ultra Marathon
Refreshment Station
Refill Station
Medical Station
Tafelberg Rd
University of Cape Town
FINISH
START
Main Rd
M3
54KM
Table Mountain
Kirstenbosch Gardens
52KM
Platteklip Dr
NEWLANDS
2KM
Twelve Apostles
50KM
Klaasens Rd
M3
48KM
4KM
Victoria Rd
46KM
44KM
Southern Cross Dr
Constantia Main Rd
Ladies Mile Ext
Constantia Nek
42KM
Houtbay Rd
6KM
Kendal Rd
WYNBERG
40KM
8KM
38KM
TOKAI
10KM
ATLANTIC OCEAN
36KM
34KM
Chapmans Peak
12KM
32KM
14KM
Chapman's Peak Dr
30KM
28KM
Ou Kaapse Weg
MUIZENBERG
16KM
26KM
KALK BAY
Indian Ocean
18KM
24KM
Main Rd
20KM
22KM
Glencairn Ex
56

QUESTION 2.4

Name of learner:_____ Class:_____