LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CAPRICORN SOUTH DISTRICT

MATHEMATICAL LITERACY

GRADE 12

ASSIGNMENT

ISSUED DATE: 17 APRIL 2023

ACTUAL WRITING: 20 APRIL 2023
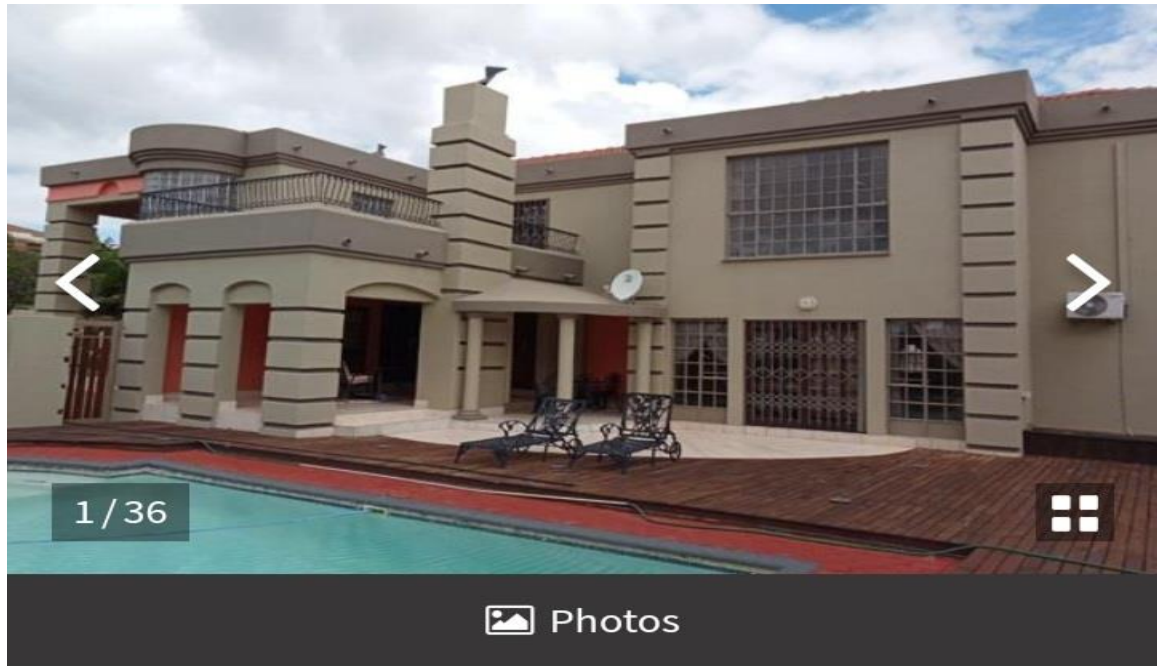
DURATION: 2 Hours

MARKS: 100

This question paper consists of 11 pages including the cover page AND 01 ADDENDUM.

INSTRUCTIONS AND INFORMATION

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

2.   Number the questions 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 ALL the final answers appropriately according to the context, unless stated otherwise.

7.   Indicate units of measurement, where applicable.

8.   Maps and diagrams are NOT necessary drawn to scale, unless stated otherwise.

9.   Write neatly and legibly.

QUESTION 1

1.1 | Isabel Louw has taken a loan to buy a house in one of the suburbs in Polokwane. The house has five bedrooms, five bathrooms and four garages.

THE PICTURE OF THE HOUSE AND LOAN AGREEMENTS

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Photos

R 5 100 000 Bond Costs ˅

LOAN INFORMATION
Deposit: 15%
Interest rate: 11,2%
Loan period: 20 years

Source: Property 24

Use the information above to answer questions that follow.

1.1.1 Define the term "Deposit" according to the given context. (2)

1.1.2 Write down the price of the house in words. (2)

1.1.3 Calculate the monthly repayment and the real cost of the house. (6)

1.1.4 If the length of this loan was 25 years, with the same deposit percentage and interest rate, what effect would this have on the real cost of the loan? (4)

1.2 Isabel Louw is planning to take a personal loan to buy two motor-bikes which can be used to deliver the plants that she is selling. Each motor-bike costs R45 000. She saw the advertisement about the loans on a local newspaper. There are two options offered and she needs to decide on the cheaper option.

EARTHNICAL PERSONAL LOANS

LOAN TERMS AND CONDITIONS PERIOD

PERIOD	INTEREST RATE	FACTOR
5 years	10,2%	21
15 years	10,2%	10.44
NB: Factor includes: interest, insurance fees, initiation fees and monthly service fees		

The following formula may be used:

Monthly repayment = Loan amount ÷ 1 000 × factor

Use the information above to answer questions that follow.

1.2.1 Calculate the total cost of the two motor-bikes. (2)

1.2.2 Calculate Isabel Louw's monthly repayment if she decides to take the loan over a 5-year period. (3)

1.2.3 Isabel Louw claims that she will pay R80 000 more over the period of 15 years. Verify whether the statement is valid or not. (6)

1.2.4 The advertisement claims that: the longer the term (loan period), the more money you save. Do you agree with this claim? Justify the answer by means of calculations. (5)

[30]

QUESTION 2

2.1 | Three brothers, Simon, Elton and Thato, combined their money into a joint bank account and then invest three quarter of the money to a Stokvel.

The table below shows the individual amount each member contribute into the account.

MEMBER	AMOUNT CONTRIBUTED
Simon	R9 000
Thato	R20 000
Elton	R13 000

Source: Adapted from Study Guide

Use the information above to answer questions that follow.

2.1.1 Calculate the amount of money that was invested into a Stokvel. (2)

2.1.2 After 5 years, the money has grown by an effective 48% from its original value. Calculate the amount of money that will be there in the investment after 5 years. (3)

2.1.3 If after 5 years, the brothers decide to withdraw and divide the whole money from the Stokvel in the ratio of their initial contributions, then calculate how much money will each member receive? (6)

2.2 | One brother, Elton, is moving into a new flat and is overwhelmed by all the things he has to do, now that he will be living alone. One of the things he has to do is to buy furniture.

He sees an advert that offers the following:

BUY A SLEEPER COUCH FOR R6 199!
Take advantage of our excellent terms and pay only R592 per month (10% deposit of the original amount over 12 months)

Source: 5STAR FURNITURE

Use the information above to answer questions that follow.

2.2.1   Elton thinks that R592 per month sounds like a very good deal. If he takes this option, calculate the amount of money he will pay for the couch **in total**.   (5)

2.2.2   Calculate the amount of interest paid for this transaction.   (2)

2.2.3   What percentage of the normal price is added on as interest if you pay the couch off?   (3)

[21]

QUESTION 3

3.1

Salminah Langa and her husband intend visiting Botswana and Zambia. The table below shows the exchange rate between the two countries and the South African rand (ZAR):

SOUTH AFRICAN RAND TO FOREIGN CURRENCY	
R1,00 (ZAR)	0,72 Botswana pula (BWP)
R1,00 (ZAR)	1,02 Zambian Kwacha (ZMK)

The accommodation in Zambia cost 360 286 ZMK per couple per day. They have paid a deposit of 1 021 605 ZMK to secure their accommodation. Dinner costs 85 134 ZMK per person and they have arranged dinner at the hotel restaurant for four times.

Use the information above to answer questions that follow.

3.1.1   Define the term "Exchange rate" according to the given context.   (2)

3.1.2   The couple budgeted to pay R120,00 per person for lunch. Convert amount of lunch for the couple to Botswana pula.   (3)

3.1.3   Calculate the total amount they will pay at the end of their ten-day stay at the hotel in Zambia.

You may use the following formula:

Total amount = (number of days × A) + (number of dinner × B) – C,
where **A** = accommodation cost, **B** = Cost per dinner and **C** = deposit paid.   (5)

3.2 | Salminah Langa plans to bake 12 dozen peanut butter cookies to sell in order to supplement the amount for the trip. She will use a recipe in imperial units. The cookies are baked at 360°F for 20 minutes.

INGREDIENTS (TO MAKE 3 DOZEN)	
$\frac{3}{4}$ cup chopped peanuts	$\frac{1}{2}$ cup peanut butter
2 eggs	4 ounces butter
1 teaspoon bicarbonate of soda	5 ounces light brown sugar
$\frac{1}{2}$ pound cake flour	Pinch of salt

Conversion Table
1 pound = 16 ounces = 480 g
1 teaspoon = 5 m*l*
1 cup = 250 m*l*

[Source: Self Study]

Use the information above to answer the questions that follow.

3.2.1 Convert $\frac{3}{4}$ cup to millilitres. (2)

3.2.2 Convert 5 ounces to grams. (3)

3.2.3 Convert 360°F to ℃, rounded off to the nearest 10 ℃.

You may use the following formula:

Temperature in ℃ $= \dfrac{°F - 32}{1,8}$ (4)

3.2.4 Calculate the number of cake flour needed to make 12 dozen cookies. (3)

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QUESTION 4

4.1 | Mr. Kevin Phalane and other team members from Johannesburg and Durban will be commuting to Cape Town by either train or coach for training of the Representative Council of Learners (RCL). **None of the team members will go by aeroplane.**

Note: In this question, you will work out the travel arrangements that will ensure that they all arrive on Friday 28th April, as close as possible to 11 a.m., which is when the bus will leave. They all want to get there as fast as possible, but they do not want to depart after 9 p.m. They will all either travel by train or coach (bus).

ROUTE	ESTIMATED DISTANCE	TIME (HOURS)	SPEED
Durban to Cape Town via Bloemfontein	1 635 km		
Johannesburg to Cape Town	1 398 km		

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Use the information above to answer questions that follow.

4.1.1 For all team members who are travelling from Johannesburg to Cape Town:

(a) Identify the better mode (train or coach) of transport to travel from Johannesburg to Cape Town. Give one reason for your answer. (2)

(b) Write down the time you think they would leave Johannesburg. (2)

(c) At what time they will arrive in Cape Town? (2)

(d) Calculate the total time taken for their journey from Johannesburg to Cape Town. (2)

4.1.2 Estimate which group of team members will travel at the greatest average speed. Average speed is the total distance travelled divided by the total travelling time. Consider that all the time they spend between leaving and arriving is travelling time. (6)

4.2 Mr. Kevin Phalane and all other team members have drafted a five-day leadership camp program for training of the Representative Council of Learners (RCL).

The table below shows the daily 24-hour programme to be followed for the five-day leadership camp.

TABLE 1: DAILY 24-HOUR PROGRAMME FOR THE FIVE-DAY LEADERSHIP CAMP

TIME	ACTIVITY
07:00 – 08:00	Breakfast
08:00 – 10:00	Workshop session 1
10:00 – 10:15	Tea
10:15 – 12:30	Workshop session 2
12:30 – 13:15	Lunch
13:15 – 15:15	Team building exercises
15:15 – 15:30	Tea
15:30 – 17:30	Plenary session and review of the day's activities
17:30 – 18:30	Supper
18:30 – 07:00	Games, bathing, sleeping

- The learners will arrive at the camp at 07:00 on Day 1, have breakfast and then go straight into the first workshop session.
- On Day 5, the plenary session and review will be moved to the 13:15 – 15:15 time slot.
- On Day 5, the learners will leave immediately after the afternoon tea.

Use the information above to answer the questions that follow.

4.2.1 Calculate the number of hours and minutes spent on attending Workshop session 2. (2)

4.2.2 Calculate the time spent (in hours) on group activities (workshops, team-building exercises, plenaries and reviews) on the first four days of the camp. (4)

4.2.3 Mr. Kevin Phalane informed other team members that the time spent in workshops, team-building exercises, plenaries and reviews will only be 35% of the time spent at the camp.

Verify, showing all calculations whether this information given to other team members is valid. (7)

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TOTAL MARKS: 100

ADDENDUM   **QUESTION 4**

4.1 Mr. Kevin Phalane and other team members from Johannesburg and Durban will be commuting to Cape Town by either train or coach for training of the Representative Council of Learners (RCL).

COACH (BUS) TIMETABLES					
Durban - Bloemfontein - Cape Town - Bloemfontein - Durban (Daily in both directions)					
Town	**Arrival**	**Departure**	**Town**	**Arrival**	**Departure**
Durban		10:45	Cape Town		11:00
Pietermaritzburg		12:30	Beaufort West		17:30
Ladysmith		14:15	Colesburg		21:00
Harrismith		15:45	Bloemfontein		23:45
Bloemfontein		21:00	Harrismith		05:00
Colesburg		23:55	Ladysmith		06:10
Beaufort West		02:55	Pietermaritzburg		08:15
Cape Town	09:15		Durban	09:30	
Johannesburg - Cape Town - Johannesburg (Daily in both directions)					
Town	**Arrival**	**Departure**	**Town**	**Arrival**	**Departure**
Johannesburg		18:00	Cape Town		18:00
Kroonstad		21:20	Beaufort West		00:05
Bloemfontein		00:05	Colesburg		03:40
Colesburg		02:45	Bloemfontein		06:20
Beaufort West		06:20	Kroonstad		09:35
Cape Town	12:30		Johannesburg	12:20	

TRAIN TIMETABLES					
Durban - Cape Town - Durban (Durban to Cape Town: Wednesdays, Cape Town to Durban: Mondays)					
Town	**Arrival**	**Departure**	**Town**	**Arrival**	**Departure**
Durban		18:30	Cape Town	18:50	
Pietermaritzburg	20:43	21:00	Beaufort West	04:00	04:30
Bloemfontein	11:14	11:45	De Aar	08:05	08:40
Kimberley	14:50	15:15	Kimberley	12:19	12:45
De Aar	19:08	19:40	Bloemfontein	15:29	16:00
Beaufort West	23:25	23:50	Pietermaritzburg	05:43	05:55
Cape Town	08:45		Durban	08:00	
Johannesburg - Cape Town - Johannesburg (Daily in both directions)					
Town	**Arrival**	**Departure**	**Town**	**Arrival**	**Departure**
Johannesburg		12:30	Cape Town		10:00
Potchefstroom	15:16	15:29	Beaufort West	19:25	19:50
Kimberley	20:54	21:20	De Aar	23:25	23:45
De Aar	01:18	01:35	Kimberley	03:32	03:46
Beaufort West	05:30	06:00	Potchefstroom	09:08	09:15
Cape Town	15:30		Johannesburg	12:16	

website Source: adapted from the Spoornet: