education

Department of Education
FREE STATE PROVINCE

JUNE PAPER 1

GRADE 12

MATHEMATICAL LITERACY



This question paper consists of 9 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. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

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QUESTION 1

1.1 Ms Hlahane received the following salary slip for the month of April 2024.

TABLE1: Salary slip showing Ms Hlahane's earnings and deductions:

OFFICE IMAGING SOLUTIONS			
PO Box 342 Tabel View Employee code: Hlahane01 Employee Name: Miss Hlahane Job Title: Managing director		Period end date: 2024/04/30 Date started: 2008/01/01 ID number: 7408050045078	
Earnings (R)		**Deductions (R)**	
Basic salary	35 000,00	Tax UIF Medical Aid Pension	5 111,00 **A** 1 350,00 2 625,00
Total earnings	35 000,00	Total deductions	**9 436,00**
Net pay			**B**

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

1.1.1 Write down the name of the employer. (2)

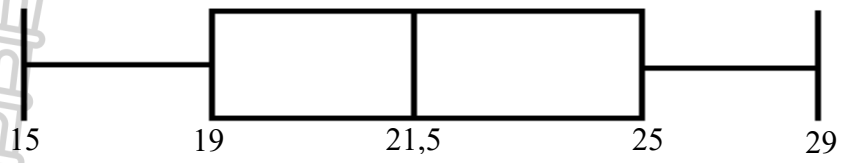
1.1.2 Explain the meaning of the term *basic salary.* (2)

1.1.3 Write the acronym *UIF* in full. (2)

1.1.4 Calculate **A,** the UIF contribution. (3)

1.1.5 Determine the net pay (**B**) for this employee. (2)

1.2 The diagram below represents the marks achieved in a Mathematical Literacy test for Class B at Kahobotjha Secondary School in Sasolburg.



Use the information given above and answer the following questions.

1.2.1 Identify the type of diagram drawn above. (2)

1.2.2 Write down the median for Class B. (2)

1.2.3 Determine the percentage of learners who obtained 19 to 25 marks. (2)

1.2.4 Calculate the difference between the maximum and minimum marks for Class B. (3)

[20]

QUESTION 2

2.1 Miss De Waal is a resident at Sasolburg and used 20 kℓ of water in June 2023.

TABLE 2: Domestic Water Tariffs for Metsimaholo Municipality in 2023/2024

Block	Water usage	Tariff (Rands) VAT excl.
Block 1	0 – 6 kl	R9,93
Block 2	6,1 – 12 kl	R23,05
Block 3	12,1 – 20 kl	R26,61
Block 4	20,1 – 30 kl	R37,65
Block 5	30,1 – 45 kl	R46,34
Block 6	More than 45 kl	R52,67

[Source from www.metsimaholo.gov.za]

Use TABLE 2 and the information above and answer the questions that follow.

2.1.1 Explain the meaning of the term *tariff* in the given context. (2)

2.1.2 Write down the maximum number of kilolitres of water that can be charged in block 2. (2)

2.1.3 Calculate the total amount, including VAT, that Miss De Waal will pay for the number of kilolitres that she used in June 2023. (7)

2.2 Miss De Waal wants to remodel her dining room. She saw a nice dining room suite at a Furniture store that she would like to purchase.



CASH PURCHASE		HIRE PURCHASE	
Discounted price	R19 999,95	Deposit	R2 000
Original price	R23 999,95	Instalment	R930 per month
		Period	3 years

[Adapted from www.bradlows.co.za]

Use the information above to answer the questions that follow.

2.2.1 Determine the difference between the original price and the discounted price. (2)

2.2.2 Write down the deposit as a percentage of the discounted price. (3)

2.2.3 Calculate the total amount to be paid after 3 years on the hire purchase option is used. (4)

2.2.4 How much would Miss De Waal save if she paid cash for the dining room suite instead of buying on hire purchase. (2)

2.2.5 Write down one advantage of buying an item on hire purchase. (2)

2.3 Miss De Waal decided to take a personal loan in order to buy the dining room suite in cash. She went to two Banks and was offered the following:

Bank A: R20 000 at 10% p.a. Simple interest for 3 years.

Bank B: R20 000 at 11,5% p.a. Compound interest for 2 years.

Determine, showing ALL calculations, which option will be cheaper for Miss De Waal. (8)

[32]

QUESTION 3

In a survey, 40 grade 12 learners from Setjhaba se Maketse Combined school were asked how many hours per week do they spend practicing Mathematical Literacy.

Their responses (to the nearest hour) are given below.

CLASS A

5	10	12	4	3	12	7	10	8	6
6	8	4	10	8	7	6	9	3	7

CLASS B

2	2	3	3	4	5	6	7	7	7
8	8	9	9	10	10	11	11	12	12

[Adapted from Ace it! Study guide gr 12]

Use table 3 and the information above to answer the questions that follow.

3.1 State if the above data is a sample and population of all the learners at Setjhaba se Maketse Combined school. (2)

3.2 Arrange the data for class A above in descending order. (2)

3.3 Calculate the mean number of hours spent practising Mathematical Literacy for class B. (3)

3.4 Determine the interquartile Range (IQR) for number of hours for class A. (5)

3.5 Determine the probability (as a decimal) of randomly selecting a learner that practiced for more than 6 hours. (3)

3.6 Give one possible reason why some learners have fewer practising hours. (2)

[17]

QUESTION 4

4.1 Mr Mathews is a 65-year-old employee who earns a basic salary of R40 165 per month. He contributes 7,5% of his basic salary towards pension fund and pays medical aid for himself and his 3 children.

TABLE 4.1: Tax rates for 2023/2024 tax year

Taxable Income (R)	Rate of Tax (R)
1 – 237 100	18% of taxable income
237 101 – 370 500	42 678 + 26% of taxable income above 237 100
370 501 – 512 800	77 362 + 31% of taxable income above 370 500
512 801 – 673 000	121 475 + 36% of taxable income above 512 800
673 001 – 857 900	179 147 + 39% of taxable income above 673 000
857 901 – 1 817 000	251 258 + 41% of taxable income above 875 900
1 817 001 and above	644 489 + 45% of taxable income above 1 817 000

Age	Threshold 2023/2024
Below age 65 years	R95 750
Age 65 years to below 75 years	R148 217
Age 75 years and over	R165 689

Rebate	Rebate Amount (R)
Primary	R17 235
Secondary (65 years +)	R9 444
Tertiary (75 years +)	R3 145

MTC (Medical tax credit)	Per month
Taxpayer	R364
First dependant	R364
Each additional dependant	R246

[Source: www.sars.gov.za]

Use TABLE 4.1 and the information above to answer the questions that follow.

4.1.1 Write down the abbreviation SARS in full. (2)

4.1.2 Show how the tax threshold value of R148 217 was calculated. (3)

4.1.3 Determine his annual medical tax credit for him and his 3 children. (4)

4.1.4 Mr Mathews claimed that is annual taxable income is R445 831,50. Verify, show all calculations, if his claim is correct. (5)

4.1.5 Hence, calculate his annual income tax. (6)

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4.2 Mining plays a significant role in the economy of our nation. The information below indicates how the mining industry performed in 2022.

TABLE 4.2: Performance of the mining industry in 2022

Metal and minerals	Number of employees	Employees earnings (in billion rands)	Royalties paid	Production (in tons)	Total sales (in billion rands)
Manganese	10 846	3,5	R802 million	16,4 million	47,6
Chrome	19 693	6,1	R850 million	17,5 million	22,8
Diamond	15 728	4,7	R362 million	7,2 million	13,3
Iron ore	19 092	6,6	R2,1 billion	70,5 million	71,4
Gold	95 130	24,3	R288 million	101,3 million	72,6
Platinum	164 513	52,1	R1,12 billion	262,9 million	126,6
Coal	92 230	27,9	R2,1 billion	258,9 million	139,3
Total	…	…	…	…	…

[Adapted from mineralscouncil.com]

NOTE:

Royalties are fees imposed by government on either the amount of minerals produced at a mine or the revenue or profit generated by the minerals sold from a mine.

A Ton is equal to 1 000kg.

Use TABLE 4.2 above to answer the questions that follow.

4.2.1 Are the number of employees above regarded as discrete or continuous data? (2)

4.2.2 Identify the type of 'metals and minerals' that are paid the LEAST royalties. (2)

4.2.3 Determine the median value for the total production. (2)

4.2.4 Calculate the probability (as a percentage) of randomly selecting a type of 'metals and minerals' that had total sales of more than 100 billion rands in 2022. (3)

4.2.5 Write down the modal value for 'royalties' paid. (2)

[31]