KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL
SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY P1
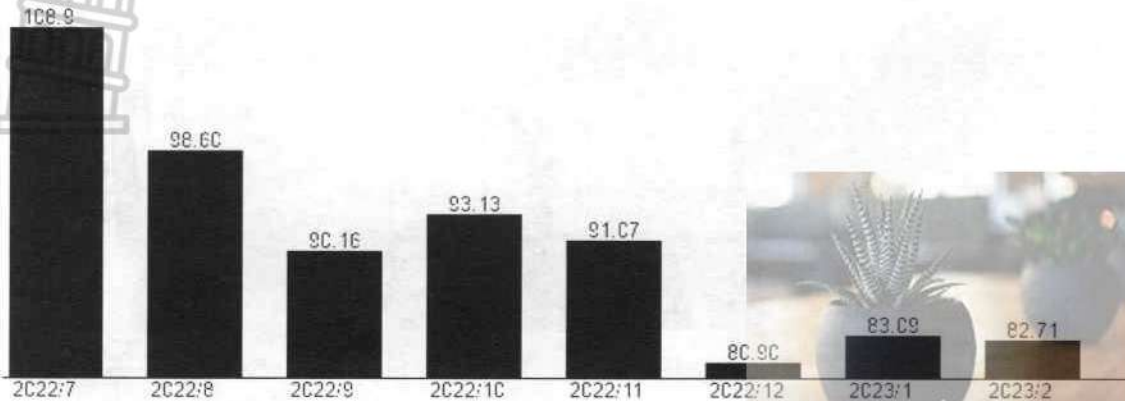
COMMON TEST

JUNE 2023

MARKS: 75

TIME: $1\frac{1}{2}$ hours

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

QUESTION 1

1.1 The graph below shows the commodity indicator of crude oil in USD per barrel from July 2022 to February 2023.

CRUDE OIL PER BARREL IN USD ($)

Commodity is a raw material or primary agricultural product that can be bought and sold, such as copper or coffee.

[source: https://www.theglobaleconomy.com/world/brent_oil_prices/]

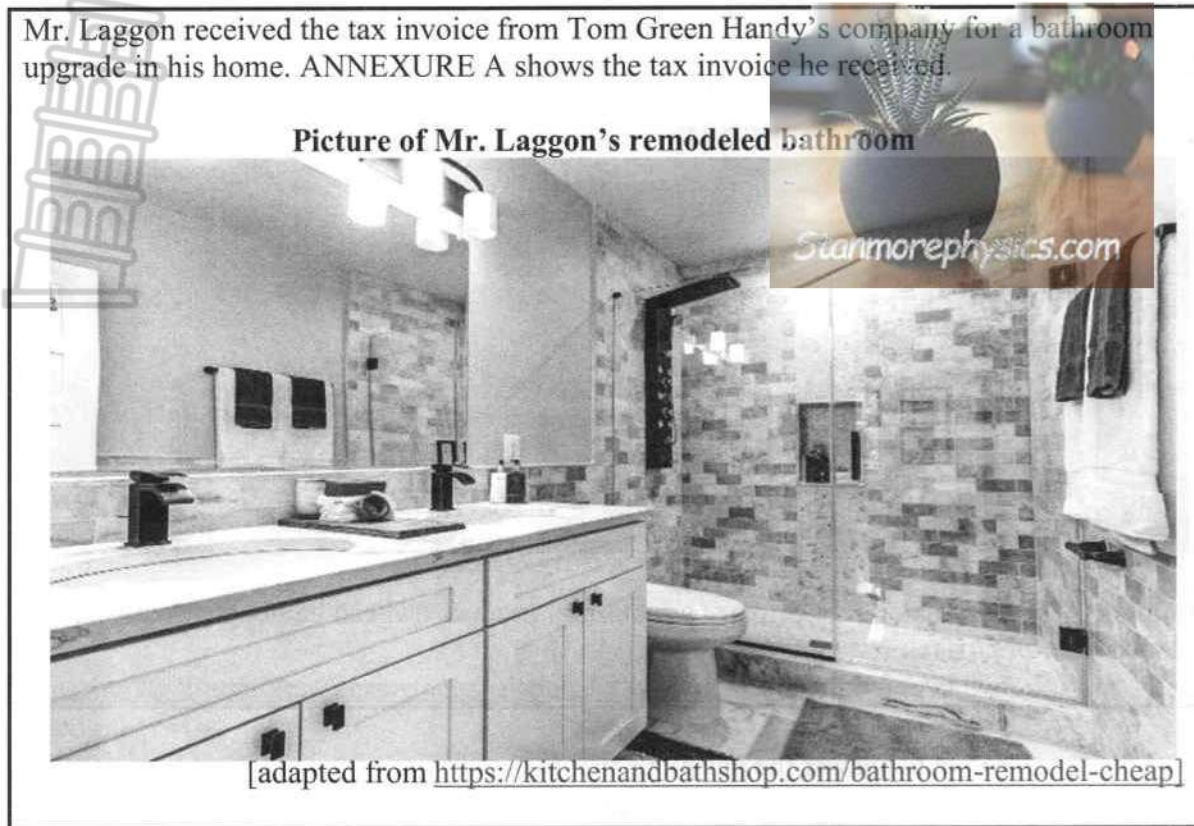Use the graph above to answer the questions that follow.

1.1.1	Identify the name of the graph used to represent the information above.	(2)
1.1.2	Determine the difference between the highest value and the lowest of the crude oil per barrel in USD ($).	(2)
1.1.3	Write in a simplified ratio the value of the barrel in August 2022 to the value of the barrel in January 2023.	(2)

1.2 Molly works as an administrator and earns a gross salary of R15 000 per month, she contributes 1% of her gross salary towards UIF. She also spends 30% of her gross salary on groceries for her family.

1.2.1	Write out UIF in full.	(2)
1.2.2	Determine the probability of her UIF contribution as a percentage.	(2)
1.2.3	How much does she spend on groceries per month?	(2)

1.3 According to SARS, the tax revenue collected was R1 563,8 billion in 2021/22 of which 25% was Value Added Tax.

1.3.1	Write down R1 563,8 billion as an ordinary amount without the decimal comma.	(2)
1.3.2	Determine the VAT revenue in rands that was collected in 2021/22.	(2)

[16]

QUESTION 2

2.1   Mr. Laggon received the tax invoice from Tom Green Handy's company for a bathroom upgrade in his home. ANNEXURE A shows the tax invoice he received.

Picture of Mr. Laggon's remodeled bathroom

[adapted from https://kitchenandbathshop.com/bathroom-remodel-cheap]

Use ANNEXURE A and the information above to answer the questions that follow.

2.1.1   Explain what will happen if Mr. Lagoon pays for the invoice on the 14th of May 2023.   (2)

2.1.2   Show by calculations how the cost of labour of $950 was calculated.   (2)

2.1.3   Give ONE possible reason why the tax registered number has some missing values and write the example of a completed tax registration number.   (2)

2.1.4   Calculate to the nearest rand the total due on this invoice, if the exchange rate is R1 costs $0,70532 at times.   (3)

2.1.5   Tom Green Handyman increased the labour cost per hour by 8,45%. Determine the new unit price for labour cost after the increase.   (3)

2.2 Mr. Laggon downloaded TWO shower rates and bath costs for saving water in order to compare the consumption for his household budget.

Standard shower-head, low flow shower- head and bath costs

R21.02 per shower
10-minute shower with **standard** showerhead
(15 litre/min)

R6.73 per shower
6-minute shower with **low flow** showerhead
(8 litre/min)

R12.61 per bath
90 litre bath

[adapted from https://poweroptimal.com]

Study the information above and answer the question that follows.

2.2.1 Calculate the percentage change between a 10-minute shower and a 6-minute shower.
You may use the following formula:

$$\text{Percentage change} = \frac{\text{Amount for 10 min - Amount for 6 min}}{\text{Amount for 6 min}} \times 100\%$$

(3)

2.2.2 The average price for electricity across major metropolitan municipalities in South Africa is R3,12 per kwh. If the 10-minute shower uses 5,8 kwh of energy per shower taken, calculate the total cost of taking 60 showers.

(3)

2.2.3 Mr. Laggon states that a 10-min shower will use more water than the other options, if a full bath or shower is taken. Verify his statement by showing all calculations.

(4)

[22]

QUESTION 3

3.1   Below is the report showing thousands of South Africans face salary reductions and retrenchments. The cost of accommodation in the country's major cities is still on the rise.

Table 1: South African major cities' average rent and average salaries.

City	Average Rent	Average Salary	% of Salary Spent on Rent
Pretoria	R6,500	R33,000	19%
Johannesburg	R8,000	R37,000	20%
Cape Town	R10,000	R38,000	27%
Durban	R7,500	R31,000	24%
Bloemfontein	R4,500	R30,000	15%
Nelspruit	R5,600	R29,000	19%
Port Elizabeth	R5,000	R28,000	20%
Rustenburg	R5,500	R32,000	17%
Polokwane	R5,000	R30,000	16%
Kimberly	R4,500	R22,000	20%

[adapted from https://businesstech.co.za/news/business/427080/salary-vs-rent/]

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

3.1.1	Identify the city with the third-lowest percentage spent on rent.	(2)
3.1.2	Determine the range of average salary in South Africa.	(2)
3.1.3	Calculate the mean average rent.	(3)
3.1.4	Determine the median average salary, hence explain what the answer means.	(4)

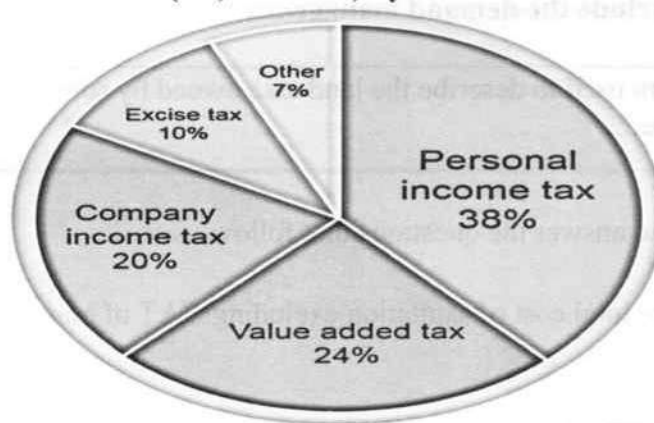3.2 Study the extract of the payslip below and answer the questions that follow.

Employee Name: **Ms. S. Msweli**		Employee No.	**200854**
Department	Centre of Research	**Payment date**	25.05.2023
Id number	9907115566778		

Earning	Amount	Deduction	Amount
Cash Salary	R41 435,90	Total Tax	R9 369,08
		UIF E contribution	R 148,78
		MA, Discovery Health	R2 007,00
		Parking levy	R 79,65
		Vitality	R 219,06
TOTAL EARNINGS	R41 435,90	Total deductions	R11 823,45

NET PAY: R_____

[adapted from www.hr.uct.ac.za]

3.2.1 Define the term *gross salary* according to the given context. (2)

3.2.2 Determines employee's net salary for the month. (2)

3.2.3 In which department does the employee work? (2)

3.3 The graph below shows the National government tax collection percentage breakdown of Tax (R1,22 billion) in 2017/18 tax year.

Percentage breakdown of tax (R1,22 billion) by National Government in 2017/18

Other 7%
Excise tax 10%
Company income tax 20%
Value added tax 24%
Personal income tax 38%

[adapted from www.statsa.gov.za/]

3.3.1 Identify the mathematical error on the given chart and give a possible reason for this error. (3)

3.3.2 Calculate the amount of company income tax collected by the government in 2017/18. (2)

[22]

QUESTION 4

4.1 | Johannesburg Water uses an increasing block tariff for the water service. The entity currently provides 6kl for free to all residential customers and the demand management levy is charged to all customers.

ANNEXURE B shows the domestic water tariff prepayment meter. All prices in the graph exclude VAT at 15% and exclude the water demand management levy of R31,08.

Use ANNEXURE B and the information above to answer the questions that follow.

4.1.1   State whether the number of kilolitres consumed will represent discrete or continuous data, Give a reason for your answer.   (2)

4.1.2   Use the graph in ANNEXURE B to calculate the total cost of consuming 28,3kl including VAT.   (5)

4.2 | The municipality charges the following sanitation tariff for private dwellings domestics.

TABLE 2: SANITATION TARIFF FOR PRIVATE DWELLINGS

SANITATION TARIFFS:	Private Dwelling Domestic
ERF (m^2)	2022/2023 Tariff (R/erf/month)
Up to and including 300 m^2	267,32
Larger than 300 m^2 to 1000 m^2	520,38
Larger than 1000 m^2 to 2000 m^2	787,24
Larger than 2000 m^2	1134,28
Prices illustrated exclude the demand management levy of R274,36 &VAT@15%	

- ERF is the term used to describe the land size owned by someone and registered in a deed office.

Use TABLE 2 above to answer the questions that follow.

4.2.1   Determine the total cost of sanitation excluding VAT of households with an ERF size of 820m^2.   (2)

4.2.2   Calculate the probability as a percentage that the tariff per ERF is below R800.   (3)

4.2.3   According to the demographic city of Johannesburg in the 2019/2020 data analysis, there were 1 035 375 households and 892 277 were using flushed toilet-public sewage. The municipality councillor indicates that 88,6 percent of the households used flush toilets in 2019/2022. Verify this statement by showing all calculations.   (3)

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TOTAL MARKS:75

ANNEXURE A

QUESTION 2.1

Tax Invoice

TOM GREEN HANDYMAN
5 Mhlanga Street, White City, 4700
Telephone:0800 * ***

Date	06/05/2023	Invoice number	:	0003521
		Tax Registered No	:	8530****

Mr Laggon
Meva 2002
White City
4700

TAX INVOICE

Quantity	Description	Unit price	Cost ($)
23.75	Labour	40	950
50	Nails and screws	0,80	40
1	Paint and Plywood	1000	1000
40	Imported wall tiles	14	560
1	Freight	150	150
1	Sub-contractor: Tile-it	228	228
		Subtotal	2928
		Tax	439,20
		Total due	$3 367,20

Payment is due by the 10th of the Month following the date of invoice.
Please make payments into Bank account No. 9876 **** 0321

An interest of 10% will be charged on late payments

[Adapted from https://www.pdffiller.com]

ANNEXURE B

QUESTION 4.1

JHB water tariff incline block per kilo litre

R0	R12,50	R19,78	R23,63	R42,78	R46,05	R57,55	R62,93	
>0 - 6	>6 - 10	>10 - 15	>15 - 20	>20 -30	>30 - 40	>40 - 50	>50	

Number of kilolitres