



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

**MATHEMATICAL LITERACY
COMMON TEST
MARCH 2020**

MARKS: 100

TIME: 2 hours

This question paper consists of 9 pages.

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 and graphs are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

QUESTION 1

1.1

Mrs Molefe buys raw mealies from the farmer at R7,00 each. The farmer delivers mealies to her home for free at 06:00. She cooks the mealies for one hour fifty minutes. She sells them at the taxi rank for R13,00 each. She sells on Monday to Saturday. A single trip to the taxi rank costs R15,00.

Use the information above and the February calendar below to answer the questions that follow.

PHOTO OF RAW MEALIES



Source: www.shutterstock.com

FEBRUARY CALENDAR 2020

SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

- 1.1.1 Determine the number of days that Mrs Molefe sold mealies at the taxi rank in February 2020. (2)
- 1.1.2 After the delivery, it takes Mrs Molefe 20 minutes to prepare raw mealies for cooking. At what time will the mealies be ready for eating? (3)
- 1.1.3 Calculate the monthly taxi fare for February 2020. (4)
- 1.1.4 Calculate the profit from the sale of one mealie. (2)
- 1.1.5 Define the term *break-even*. (2)
- 1.1.6 Write down the formula for calculating the cost per day in the form:
Cost = + × (2)
- 1.1.7 Write down the formula for calculating the income per day in the form:
Income = × (2)
- 1.1.8 Calculate the profit made if she bought 70 raw mealies and only sells 40. (6)

1.2

Mr Molefe is a fisherman. Before he goes to the sea shore to fish, he studies the tide table. Below are the two tide tables for Durban showing tides for Tuesday 28/01/2020 and Wednesday 29/01/2020.

Use the information above and TABLE 1 below to answer the following questions.

TABLE 1: Showing Durban tide tables for 28/01/2020 and 29/01/2020

28/01/2020				29/01/2020			
Tide	Time	Height		Tide	Time	Height	
High tide	5:44 am	1,91 m		High tide	6:13 am	1,86 m	
Low tide	11: 49 am	0,43 m		Low tide	12:18 pm	0,50 m	
High tide	5: 49 pm	1,8 m		High tide	6:17 pm	1,76 m	
Low tide	11:59 pm	0,35 m		Low tide	–	–	
Sunrise 5:20 am	Sunset 6:56 pm	Moonrise 8:17am	Moonset 9:21pm	Sunrise 5:21am	Sunset 6:55pm	Moonrise 9:10am	Moonset 9:51pm

Source: www.tide-forecast.com

- 1.2.1 Calculate the difference in time between the high tide and low tide in the morning on 28 January 2020. (2)
- 1.2.2 Write down the time for a low tide in the afternoon of 29 January 2020 in a 24-hour format. (2)
- 1.2.3 Convert the height of the high tide to feet (ft) on 28 January 2020 in the morning.

Note: 1 foot = 30,48 cm (4)

[31]

QUESTION 2

2.1

The Du Toit family stays in Newcastle. They decided to change the electricity from the metered one to domestic prepaid. Below is a table of the Newcastle electricity tariffs for 2017/2018 and 2018/2019. Mr van Zyl is the Du Toit's neighbour.

Note: The municipality financial year of services starts on 1 July of the current

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

TABLE 2: Showing Newcastle electricity tariffs for domestic in 2017/2018 and 2018/2019.

Block	Tariff/ kWh in cents excluding 15% VAT 2017/2018	Tariff/ kWh in cents excluding 15% VAT 2018/2019
Block 1: (0-50 kWh)	96,93 cents	104,68 cents
Block 2: (from 50 – 350 kWh)	116,88 cents	126,53 cents
Block 3: (from 350 - 600 kWh)	124,92 cents	134,91 cents
Block 4: (> 600 kWh)	131,57 cents	142,10 cents

Source: www.newcastle municipality.gov.za

- 2.1.1 Determine the number of kilowatt hours (Kwh) in block 1 and block 2. (2)
- 2.1.2 Write the ratio of kilowatt hours of block 1 to block 2 in simplest form. (2)
- 2.1.3 In May 2018, the family bought electricity for R600,00 including VAT.
- (a) Calculate the VAT amount. (3)
- (b) Determine the number of kilowatt hours (kWh) they received. (6)
- 2.1.4 In May 2019, Mr van Zyl's family consumed 503 kWh of electricity. Calculate the total amount including VAT that this family will pay. (6)

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QUESTION 3

3.1

Lindani who is 45 years old, is married with 3 children. He earns a monthly taxable income of R32 500. He contributes to a medical aid scheme for him and his family. The Adapted Tax table for 2019/2020 is shown below.

TABLE 3: TAX RATES FOR INDIVIDUALS FOR THE 2019/2020 TAX YEAR

Taxable Income	Rates of tax
0 - 195 850	18 % of taxable income
195 851 - 305 850	35 253 + 26% of taxable income above 195 850
305 851 - 423 300	63 853 + 31% of taxable income above 305 850
423 301 - 555 600	100 263 + 36% of taxable income above 423 300
Rebates	
Primary Rebate	R14 220
Secondary (Persons 65 and older)	R7 794
Tertiary (Persons 75 and older)	R2 601
Medical Aid Tax Credits per month	
Main member	R310
First dependant	R310
Each additional dependant	R209

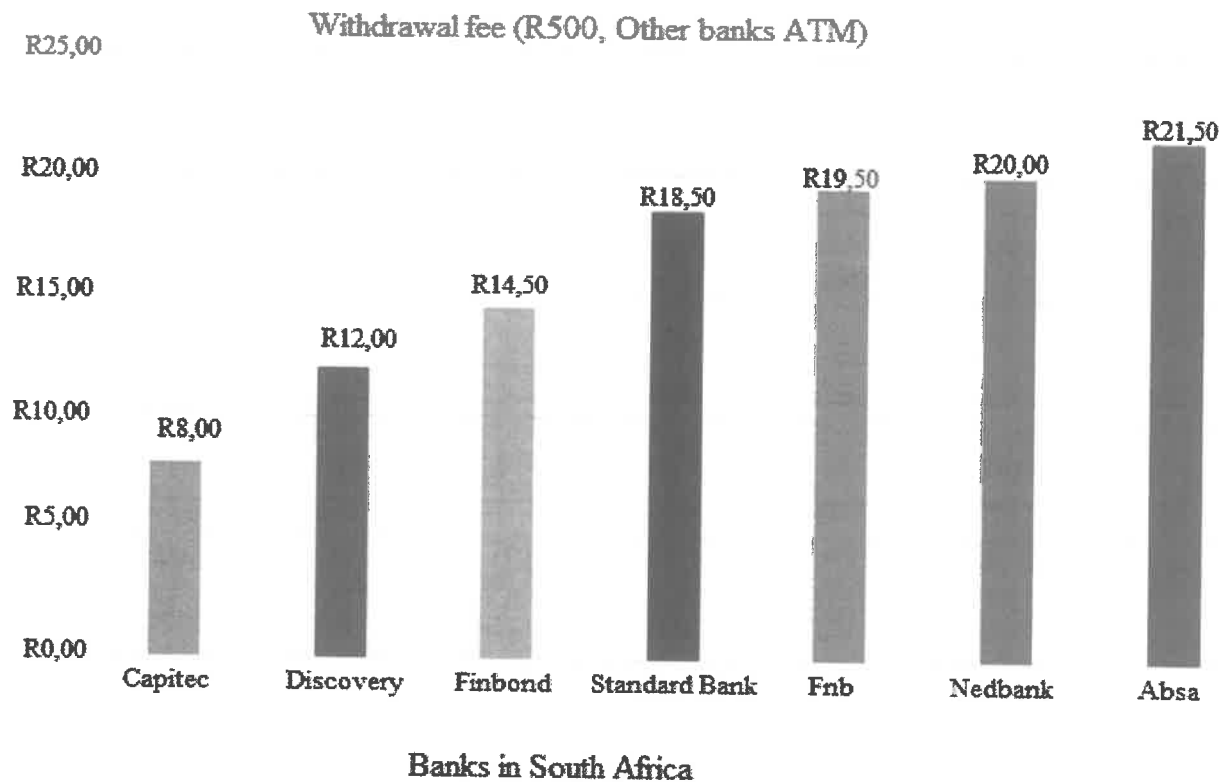
[Adapted source: www.sars.org]

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

- 3.1.1 Calculate Lindani's annual taxable income. (2)
- 3.1.2 Determine Lindani's total medical aid tax credit for the year. (3)
- 3.1.3 Hence, calculate his monthly income tax for the year 2019/2020. (8)

3.2

The graph below shows the 2020 Bank withdrawal fees for R500 charged by the different Banks in South Africa.



[Adapted source: www.busstech.co.za/]

Use the graph and the information above to answer the questions that follow:

- 3.2.1 Identify the price difference between the most expensive and the least expensive withdrawal fee. Give a reason for this price difference. (3)
- 3.2.2 FNB charges a fixed bank fee plus R1,90 for every R100 withdrawn. Use the graph to calculate the fixed bank fee. (4)
- 3.2.3 Determine the percentage change in the withdrawal fee for Capitec bank, if the cost to withdraw R500 in 2019 was R8,75.

You may use the formula:

$$\% \text{ change} = \frac{\text{New} - \text{original}}{\text{original}} \times 100 \quad (3)$$

