GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

Johannesburg North District

(D10)

March 2023

End of Term 1
Control Test

Grade 12
Mathematical Literacy

Stanmorephysics

Marks: 100

Time : 2 hours

This question paper consists of 10 pages including this cover page, ANNEXURE and ANSWER SHEET

INSTRUCTIONS AND INFORMATION

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

2. 2.1 Use ANNEXURE A to answer QUESTION 1.1
   2.2 Answer QUESTION 3.1 on ANSWER SHEET 1

3. Show **ALL** calculations clearly

4. Write neatly and legibly.

5. You may use an approved calculator, unless stated otherwise.

4. Round off ALL final answers appropriately according to the given context, unless stated otherwise

5. Indicate units of measurement, where applicable.

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

QUESTION 1

1.1 A summarised Statement of Financial Performance for Endumeni Local Municipality for the year ending 30 June 2022 is in **ANNEXURE A.**
Use **ANNEXURE A** to answer the following questions:

1.1.1 How much does does this municipality make from Licences and permits? (2)

1.1.2 Calculate the value of **A**, Revenue from non-exchange transactions. (2)

1.1.3 Write down the revenue from 'Interest earned - external investments' amount in words. (2)

1.1.4 Round off the amount spent on Remuneration for Councillors to the nearest R100 000.
Write your final answer using the word 'million'. (2)

1.1.5 Define the term expenses in this context. (2)

1.1.6 On what does the Endumeni Municipality spend the highest amount of money on? (2)

1.1.7 Determine the value of **B**, the surplus/deficit for the period. (2)

You may use the formula:

Surplus/deficit = Total revenue – Total expenses

1.1.8 Is the value of **B** calculated above a surplus or deficit. (2)

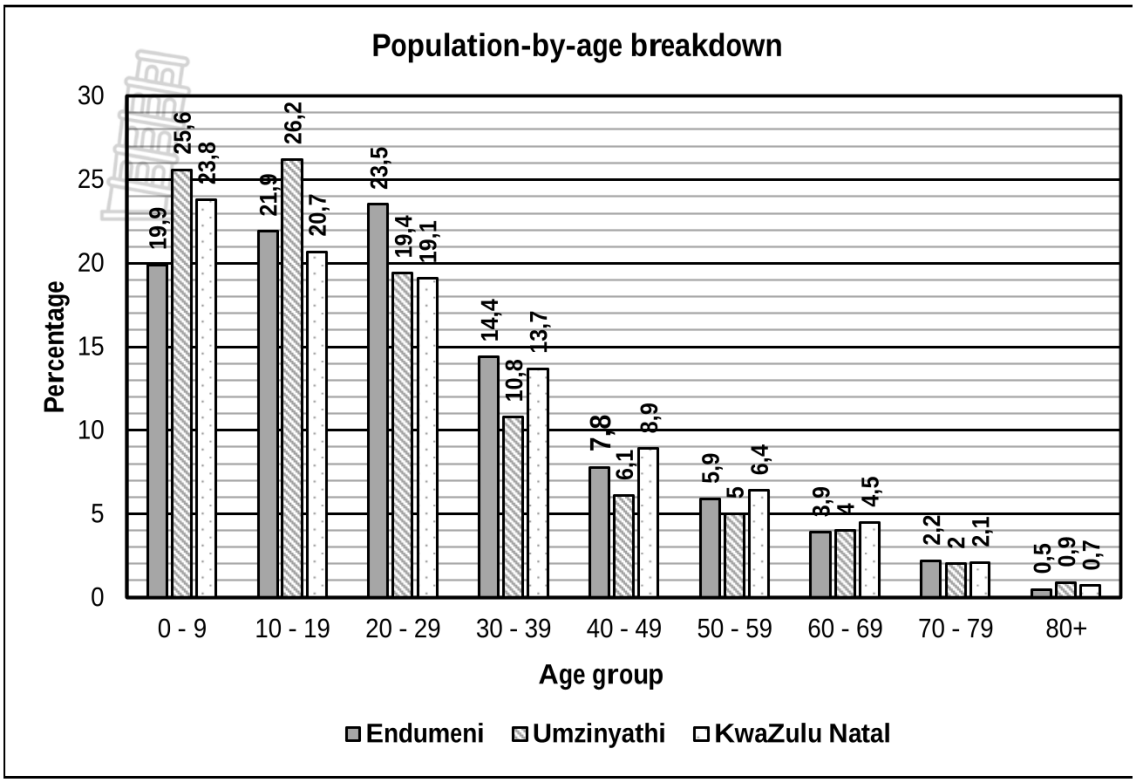
1.1.9 What percentage of expenses is spent on operational expenses? Round off your answer to the nearest one decimal place. (3)

You may use the following formula:

$$\textbf{\% of expenses spent on operations} = \frac{\text{Operational costs}}{\text{Total expenses}} \times 100\ \%$$

1.2

The graph below shows the population by age breakdown of KwaZulu Natal province and two of its municipalities, Endumeni and Umzinyathi.



Use the graph to answer the following questions:

1.2.1 Name type of graph used to represent the information above. (2)

1.2.2 Which age group has the second highest percentage of people in Umzinyathi? (2)

1.2.3 What is the difference in percentage between Umzinyathi and Endumeni in the 10 – 19 age group? (2)

1.2.4 Arrange the percentages for Endumeni Municipality in descending order. (2)

1.2.5 According to Statistics South Africa (Stats SA), the population of KwaZulu Natal was 11 065 240 in the year 2016. Using values in the graph above, calculate the number of people in the age group 20 – 29 in this province. (3)

1.2.6 Is the data represented in the graph categorical or numerical? (2)

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QUESTION 2

TABLE 1 below shows domestic water tariffs for City of Johannesburg for the years 2021/22 and 2022/23.

TABLE 1: City of Johannesburg Water Tariff

Bands (kilolitres)	Tariff (R/kl) excl. VAT		% Increase
	2021/22	2022/23	
0 – 6	R0, 00	R0,00	-
> 6 – 10	20, 28	22,26	9,76
> 10 – 15	21,17	23,23	9,73
> 15 – 20	29,68	32,57	9,74
> 20 – 30	41,01	45,01	9,75
> 30 – 40	44,86	49,23	9,74
> 40 – 50	56,59	62,11	9,75
>50	60,65	**A**	9,74

[Adapted from: Joburg.org.za]

Use TABLE 1 to answer the following questions:

2.1 Define the term tariff in this context. (2)

2.2 What does the abbreviation VAT stand for? (2)

2.3 The tariff for the >50 band increased by 9,74% as shown on TABLE 1. Calculate the value of **A**. (2)

2.4 Show how the percentage increase of 9,73% for the > 10 – 15 band was calculated. (3)

2.5 The Molefe household used 18,3 kl of water in January 2023.

2.5.1 The average residential water consumption in South Africa is 111, 79 litres per person per day.
If there are 5 people in the Molefe household, determine whether this household consumes more or less than this average using a 30 day month. (5)

2.5.2 Calculate the cost of their water usage including 15% VAT. (6)

2.6 Mr Molefe thinks their water bill is too high. Suggest two ways they could reduce water consumption in their home. (4)

[24]

QUESTION 3

TABLE 2 below shows the matric pass rate of the 9 provinces in South Africa from the years 2019 to 2022.

TABLE 2: Matric Pass Rate (as a percentage) per Province

Province\Year	2019	2020	2021	2022
Gauteng	87	84	83	84,4
Western Cape	82	80	81	81,4
KwaZulu Natal	81	78	77	83
Free State	88	85	86	85,5
North West	87	76	78	79.8
Eastern Cape	77	68	73	77,3
Limpopo	73	68	67	**A**
Mpumalanga	**B**	74	73	76,8
Northern Cape	77	66	71	74,2

[Adapted from: www.education.gov.za]

Use TABLE 2 above to answer the following questions:

3.1 An incomplete bar graph for the year 2020 matric results is drawn on ANSWER SHEET 1. Complete this bar graph on ANSWER SHEET 1. (3)

3.2 Which province recorded the second lowest pass rate in 2021? (2)

3.3 In 2022 Limpopo province recorded the lowest pass rate of the nine provinces. If the range of the pass percentages for this year (2022) was 13;4%, calculate the value of **A**, the pass rate for Limpopo in 2022. (3)

3.4 If the mean pass rate for 2019 is 81,3% calculate the value of **B**, the pass rate for Mpumalanga. (4)

3.5 The Minister of Education announced that 92 285 candidates passed matric in Gauteng in the year 2020.
Calculate the total number of learners that sat for the 2020 examinations in Gauteng? (3)

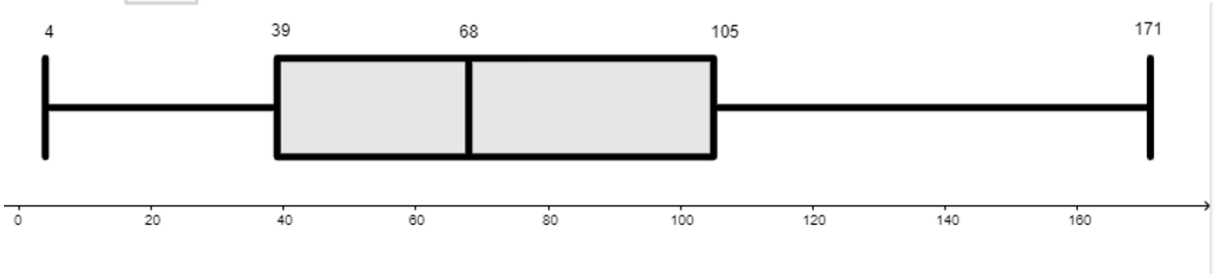
3.6 All the provinces recorded a drop in results in the year 2020. Suggest a reason why this was the case. (2)

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QUESTION 4

4.1 The box-and-whisker diagram below represents the number of learners who offered Mathematical Literacy per school in the Johannesburg North district in the year 2020.

FIGURE 1: Number of learners offering Mathematical Literacy per school in Johannesburg North District in 2020



Use the box-and-whisker diagram above to answer the following questions:

4.1.1 Write down the 5 number summary from the box-and-whisker diagram above. (4)

4.1.2 Write down the percentage of schools that had 105 or more learners offering Mathematical Literacy? (2)

4.1.3 Calculate the interquartile range of the above data. (3)

4.1.4 If Johannesburg North District had 70 schools with learners registered for Mathematical Literacy, calculate the number of schools who had between 39 and 105 learners doing Mathematical Literacy. (3)

4.2

Mrs Maphumulo, 40 years old, is employed by Endumeni Municipality as a supervisor. She earns a monthly taxable income of R23 500 per month for the 2021/22 tax year.

Mrs Maphumulo, her husband and their child belong to a medical aid scheme.

TABLE 1 below shows the tax table for the 2021/22 tax year.

TABLE 1: TAX RATES FOR 2021/22 TAX YEAR (1 Mar. 2021 to 28 Feb. 2022)

TAX BRACKET	TAXABLE INCOME (R)	RATES OF TAX (R)
1	1 – 216 200	18% of taxable income
2	216 201 – 337 800	38 916 + 26% of taxable income above 216 200
3	337 801 – 467 500	70 532 + 31% of taxable income above 337 800
4	467 501 – 613 600	110 739 + 36% of taxable income above 467 500
5	613 601 – 782 200	163 335 + 39% of taxable income above 613 600
6	782 201 – 1 656 600	229 089 + 41% of taxable income above 782 200
7	1 656 601 and above	587 593 + 45% of taxable income above 1 656 600

[Adapted from: www.sars.gov.za]

TABLE 2 below shows the tax rebates and medical aid credits for the 2021/2022 tax year.

TABLE 2: Tax rebates and medical aid credits for the 2021/22 tax year

TAX REBATE	
Primary	R15 714
Secondary (65 years and older)	R8 613
Tertiary (75 years and older)	R2871
MEDICAL CREDITS PER MONTH FOR MEDICAL FUND MEMBERS	
Main member	R332
First dependent	R332
Each additional dependent	R224

[Adapted from: www.sars.gov.za]

4.2.1 Calculate Mrs Maphumulo's annual taxable income for the 2021/22 tax year. (2)

4.2.2 Calculate Mrs Maphumulo's medical credits for the tax year in question. (3)

4.2.3 Calculate the amount of tax Mrs Maphumulo must pay for 2021/22 tax year. (6)

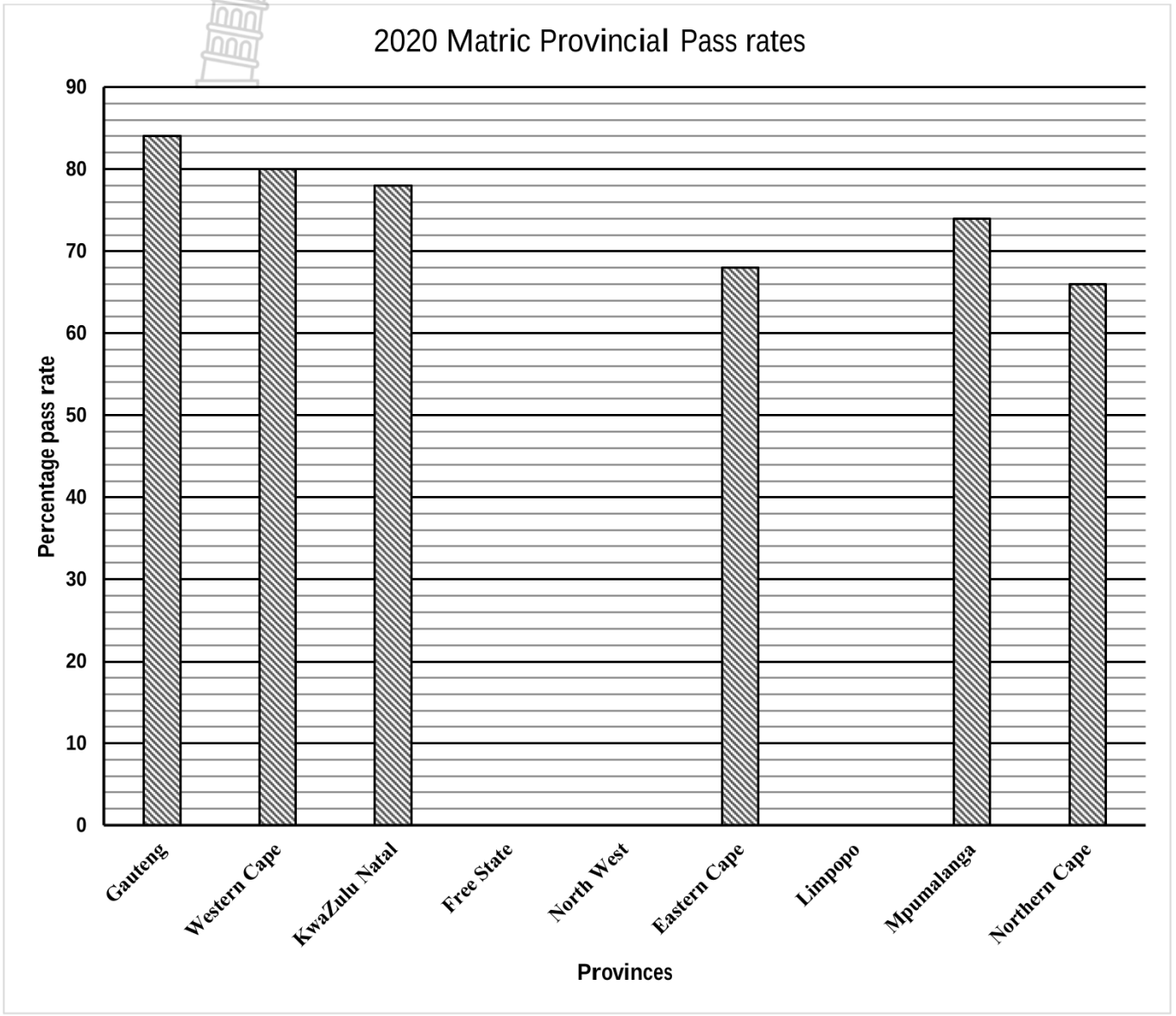
4.2.4 Name one other type of tax, besides income tax, that is levied on citizens. Give one reason why it is important to pay taxes. (4)

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ANSWER SHEET 1

QUESTION 3.1

SURNAME & NAME:_____ **CLASS:**_____



ANNEXURE A

QUESTION 1.1

Endumeni Local Municipality: Statement of Financial Performance for the year ending 30 June 2022

	R
REVENUE	
Revenue from exchange transactions	163 255 233
Service charges	155 978 689
Rental facilities and equipment	3 867 981
Interest earned – external investments	811 958
Licences and permits	2 195 959
Operational revenue from exchange transactions	400 645
Revenue from non-exchange transactions	**A**
TOTAL REVENUE	**356 014 352**
EXPENSES	
Employee related costs	135 587 459
Remuneration for councillors	4 484 263
Operational costs	6 718 683
Municipal services costs	48 228 195
Bulk purchases electricity	145 803 039
Other expenses	6 404 358
TOTAL EXPENSES	**347 225 997**
Surplus / deficit for the period	**B**

[Adapted from www.endumeni.gov.za]