education
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA
GERT SIBABDE

MATHEMATICAL LITERACY

EASY SCORING MANUAL

GRADE 12

2021

INTRODUCTION

Mathematical Literacy provides learners with an awareness and understanding of the role that mathematics plays in the modern world. Mathematical Literacy is a subject driven by life-related applications of mathematics. It enables learners to develop the ability and confidence to think numerically and spatially in order to interpret and critically analyze everyday situations and to solve problems."

Mathematical literacy involves the use of elementary mathematical content. The focus is not on abstract mathematical concepts. As a matter of fact if the required calculations cannot be performed using a basic four-function calculator, then the calculation is not appropriate for Mathematical literacy. Furthermore in the Mathematical Literacy classroom mathematical content should not be taught in the absence of context.

(Mathematical Literacy, CAPS)

TAKE NOTE OF THE FOLLOWING MATHEMATICAL LITERACY GRADE 12 LEARNER

Mathematical literacy provides learners with a TOOL TO BE USED to UNDERSTAND the world we live in

Remember that Mathematical Literacy is a subject that will help you to 'Identify and Understand the role that Mathematics play in the World, to make Well – Founded Judgements and to use and Engage with Mathematics in ways that meet the needs of your life as a Constructive, Concerned and Reflective Citizen'(OECD,1999).

GUIDELINES FOR AT LEAST 30% ATAINMENT

Learners should master the following topics in order to achieve at least 30%

TOPICS	Examples
BASIC SKILL CALCULATIONS	
▪ **WORKING WITH NUMBERS** ✔ Working with operations(+,−, ×, ÷), Learners should master the use of calculator and understand **BODMAS** rule. ✔ Appropriate rounding of numbers according context. ✔ Estimation ✔ Rounding off ✔ Convert fractions to decimals ✔ Convert decimals to fractions ✔ Substitute on a given formula ✔ Number formats and names. ✔ Changing the subject of the formula. ✔	* Simplify: $232,46(124,32 - 121,79) + \sqrt{2344523}$ ❖ Write $\frac{9}{17}$ as a decimal fraction ❖ Write 0,25 as a common fraction ❖ Use the formula Speed = $\frac{distance}{time}$
▪ **PERCENTAGE** ✔ Convert a fraction to a percentage ✔ Calculate the direct percentage of a given amount ✔ Increase or decrease a given amount by a certain percentage ✔ Calculating values from a given amount increased or decreased by a percentage.	❖ write $\frac{7}{10}$ or 0,21 as percentage ❖ Increase /decrease 24 by 10% ❖ Calculate 10% of 74 learners
▪ **RATIO** ✔ Writing ratios in correct order and in simplified form. ✔ Calculating values given a ratio.	❖ Simplify : 500 m : 20 cm ❖ Write as a ratio the number of girls to the number of boys in a class. ❖ He buys the phones in a ratio **Phone D: Phone E = 3: 2.** Determine the number of **Phone E's** on an invoice with an order of 60 **Phone D's.**
▪ **Rates & proportion (Integrated)** ✔ Comparison of quantities ✔ Conversion of imperial units ✔ Exchange rates ✔ Scale	❖ Change from dollars to rand and visa versa. ❖ If it takes 10 minutes to boil 15 litres of water, how long will it take to boil 55 litres .

TOPICS	Examples
FINANCE	
FINANCIAL DOCUMENTS AND TARIFF SYSTEMS. ○ Explain terminologies according to given context. ○ Reading directly from a document (name, date, age, address, amount, etc.) ○ Show how the total is calculated ○ Calculate VAT ○ Calculating values for items such as UIF, pension fund, opening balance, closing balance, gross, net, total deductions, balance, etc. ○ Determine the total cost given a tariff and the number of units used. ○ Use a given formula/tariff to show how the amount charged on the bill has been determined. ○ Writing down a general formula given a tariff system. ○ Draw graphs in the same set of axis.	❖ Determine the opening balance in this account. ❖ Explain the meaning of debit in this context. ❖ Show how the VAT amount was calculated. ❖ Show how the total amount of R345.50 was calculated. ❖ Calculate the value of B.
INCOME AND EXPENDITURE ○ Classify items on an income and expenditure statement as fixed, variable and occasional income and expenditure. ○ Add numbers to calculate total cost, income, expenditure. ○ Determine the income generated by sales. ○ Calculate loss/profit if income and expenses are both given ○ Calculating percentage mark up. ○ Construct a budget of a small project. ○ Determining equations(formulae) ○ Constructing a table of data. ○ Plot graphs given a table of data and/or formulae. ○ Explain the meaning of break- even point according to context ○ Determining the break-even point in the table, or given the graphs of income and expenditure.	❖ Is the rent fixed or variable expenses? ❖ Calculate the profit margin given the Formula. ❖ Calculate the total income ❖ Explain the meaning of break - even point in this context. 'How many sweets must be sold in order to break – even'. ❖ Use the table 1 or otherwise to draw a graph of income in the set of axis provided.
INTEREST AND INFLATION ○ Explain the meaning and difference between "interest" and the "interest rate". ○ Identify interest rate quoted on financial documents ○ Perform simple interest calculations manually over a multiple period of time. ○ Perform compound interest calculations manually over two or three period of time. ○ Read values off graphs showing simple and compound investment scenarios. ○ Explain the meaning of inflation. ○ Increase a value by a percentage to show how an item is affected by inflation. ○ Calculate the original value given the inflation amount and inflation rate. ○ Calculate inflation rate.	❖ Explain the meaning of the term interest with reference to the student fees statement. ❖ Calculate the monthly interest rate that was used on the overdue fees for the previous year. ❖ Explain the term inflation within the given context. (i) Calculate by how much the cost, in rand, of a trolley had increased from 2000 to 2005." (ii) Calculate the percentage increase of Ricoffy from 1970 to 2015. You may use the following formula:

TAXATION ○ Work in conjunction with payslips to identify the monthly salary. ○ Determine the annual salary given the monthly salary or visa versa. ○ Explain how the "taxable income" has been determined or determine the "taxable income" ○ Explain the meaning of the terminologies and/or calculate "Gross pay", "net pay", "deductions", "taxable income" and "rebate" ○ Identify the tax bracket into which an individual falls based on given monthly or annual salary and write down the tax bracket formula.	❖ Calculate Mrs John's annual gross salary. ❖ Calculate Mrs John's annual pension fund contribution. ❖ Calculate Mrs John's annual medical aid fund contribution ❖ Show that Mrs John's performance bonus is R48 750. ❖ Determine Mrs John's annual taxable income ❖ Identify the tax bracket in which Mrs John's income falls. ❖ Calculate the rebate Mrs John will receive.
EXCHANGE RATE ○ Identify the exchange rate between two currencies from a given table or rate board. ○ Use a given exchange rate to determine the value of one currency for a specific quantity of another currency.	❖ Convert the total cost of the phones in Chinese Yuan. Use the exchange rate: R1 = 0,52709 Chinese Yuan (CNY)
TOPICS	**Examples**
MEASUREMENT	
CONVERSIONS ○ Converting to a smaller unit of length, time, mass etc. ○ Converting to a bigger unit of length, time, mass, etc ○ Cooking conversions. ○ Converting units of area ○ Converting units of volume ○ Conversions given conversion tables ○ Converting from ^{0}C to ^{0}F or visa versa using a given formulae.	❖ Convert: 24,5 centimeters to meters ➢ 2 cm^2 to m^2 ➢ 5000 m^3 to cm^3 ❖ Converting: minutes to hours ➢ hours to minutes ➢ seconds to hours ➢ seconds to ➢ Minutes
WORKING WITH A GIVEN FORMULAE ○ Calculations of perimeter, area and volume where dimensions and formulae are readily given ○ Using appropriate units. ○ Identify and write down correct formula. ○ Not omitting units ○ Determine the radius of a circle given a diameter. ○ Determine the diameter of a circle given a radius.	❖ The ability of learners to substitute correctly into a given formula, and writing appropriate units.
KNOW and USE APPROPRIATE VOCABULARY such as : Equation, formulae, Cartesian plane, area, surface area, perimeter, radius, diameter, length, breadth, height, base, circumference, volume, capacity circle, cylinders, right prisms, triangular, rectangular and square.	❖ Determine the length of one side of a square if the perimeter is 36 m

○ **MEASURE VALUES** which involve lengths, distances, weight and time using appropriate measuring instruments sensitive to levels of accuracy in a familiar context. ○ Perform calculations using measured values. ○ Calculate **BMI** and interpret charts. ○ Read values from a clock and perform calculations.	❖ Calculate the **BMI** using the formula:

TOPICS	**Examples**
PATTERNS AND RELATIONSHIPS 	
▪ Substitute number(s) into a given formula when there is a functional relationship (finding output values). ▪ Determining an equation(formula) when given a table of data or simple context.	❖ If total cost = R13,50 × n find the total cost when n = 1, 2, 3 4 and 5
▪ Solve equations (finding input values for simple equations, and complex equations ▪ Determine output values for given input values ▪ Work with formulae to establish points to plot.	❖ Given data in the table: If A = P + Q + C find the values A and C
▪ Read answers directly from a given simple graph and/or table.	● How many apples were sold to make R90.
▪ Point-by-point plotting of data when data is given. ▪ Identifying the break - even point from the graphs.	● Use the given set of axis to draw a graph of expenditure.

Topics	Examples
MAPS, PLANS and other representations 	
SCALE AND MAPS ○ Explain the meaning of the scale ○ Identify the scale of the map ○ Calculate the actual distance given the scale (bar or number) visa versa. ○ Use grids and maps in order to determine locations in a familiar context, applying routine procedures ○ Grid reference ○ Provide set of directions to travel between two locations. ○ Use compass directions ○ Identify labels/names of national roads that must be travelled between two locations. ○ Identify the names of the towns on the route between two locations. ○ Use distance values on the map to determine the travelling distance between two locations.	❖ Use the given scale to calculate the distance from Upington to Pinetown. ❖ Explain the meaning of the scale given in the map. ❖ Give the general direction of Polokwane from Mbombela. ❖ Describe the route from Durban to Pretoria. ❖ Name the national roads Olga will use travelling from Ermelo to Mafikeng. ❖ Use the given map to calculate the distance from Maputo to Witbank.
FLOOR PLANS AND MODELS ○ Identify the scale of the plan ○ Explain the meaning of the terms (e.g. floor plan, elevation plan, layout plan, etc.) ○ Read off values given the dimensions of the plan (e.g. length = 4m, width = 3m) ○ Use the given key to identify the number of doors, windows etc. ○ Identify on which plan a particular structure is Shown (e.g. a window is shown on a North elevation.) ○ Link elevation plans to floor plans. ○ Measure dimensions on the plan and use scale to determine the actual dimensions. ○ Calculate the number of small boxes or cans that can be contained in a box.	❖ Which elevation is shown on the plan. ❖ How many windows does the plan have? ❖ Use the given scale to calculate actual length of the dining room.

1. **TOPICS**	**Examples**
DATA HANDLING 	
○ Identify method/instrument used to collect the given data. ○ Classify data as categorical, numerical, discrete and/or continuous and explain the differences. ○ Sort data according to categories (e.g. males and females) ○ Calculate the percentage values to represent the relative size of different categories of data. ○ Understand terminologies like mode, mean, range, quartiles, inter-quartile range etc. ○ Calculate, mean, median and range for arranged and non – arranged data. ○ Identify the minimum and maximum given a set of data. ○ Arrange data in ascending or descending order. ○ Identify the mode. ○ Complete a given frequency tables. ○ Construct tally tables ○ Read values directly from the values from the table	❖ Given the sizes of shoes in grade 10 class - Arrange the data in ascending / descending order - Identify the mode - Find the range - Find the median - Construct tally tables ❖ Given Pie chart or Bar graph read information from this graphs
○ Read values directly from the values from the graph. ○ Estimate values from given graphs. ○ Draw graphs from given data. These graphs include pie charts, single and	❖ Given data learners should be able to draw, single bar graph, compound bar graph and pie charts

TOPICS	
PROBABILITY	
○ Explain the meaning of the terms associated wit probability. ○ Identify the percentage chance from a given sce ○ Express the probability of an event using fractio percentage and decimal notation. ○ Explain whether a prediction or statement indica impossible, unlikely, even, likely, or certain.	
compound bar graphs, line and broken line graphs and histograms and scatter plots.…	

NOTES:

- These guidelines are applicable to learners who obtained 35% or less in the Previous assessment(s). If learners improve in the preparatory examination, advance them to the next level.
- Use the **TOPIC MANUALS** to identify activities that are in line with these guidelines **Together/ in conjunction** with prepared **ACTIVITIES HERE**.
- Each learner must have the topic specific manuals/**activity manual (this one)**, **Terminology** and should master them.
- Learners are expected to workout solutions through the guidance of the teacher.

REQUIRED RESOURCES
❖ A Good Textbook, Workbooks and Glossary of Words, Study guides, Calculator, Ruler, Pen and Pencil ❖ A collection of examination question papers and marking guidelines from Previous years.
CONTENT CHECKLIST: ❖ Use this checklist to ensure that you have covered the **CONTENT** in **FULL**.
1. DATA HANDLING: ❖ Data Collection methods (interview, questionnaires, etc). ❖ Populations and Samples. ❖ Summarizing data(measures of Central Tendency and Spread) ❖ Mean, Median, Mode, Range, Quartiles, Interquartile and Percentiles (Interpretations).

- Data organization and Display.
- Tables, Tallies, Pie Charts, Single and Compound Bar Graphs, Histograms, Line and Broken – line Graphs.
- Use and Misuse of Statistics.
- Simple Representatively and bias
- Misleading Graphs.

2. FINANCE:

- Personal and Business Finance
- Budgets, Invoice, Loans, Banking, etc.
- Income and Expenditures
- Profit and Loss
- Effects of: Taxation. Inflation, Changing Interest Rates, Currency Fluctuations.
- **INTERPRET** calculated answers in terms of contexts used.

DEALING WITH RELATIONSHIPS:

- Formulae, Tables and Graphs:
- Write Formulae for Relationships given on a Table in words.
- Represent Relationships on a Table using the given Formulae.
- Represent Relationships given on a Table or Formulae graphically.

DEALING WITH GRAPHS, TABLES and **FORMULAE:**

- Find Output values for the given Input values (from a Table/Formulae/Graph) and vice versa
- Predict future Output values for given Input values (using a Table/Formulae/Graph) and vice versa.
- Identify trends from Tables/Graphs.
- Compare trends from two or more Graphs/Tables.

3. MAPS, PLANS and other REPRESENTATIONS:

- Maps and grids.
- Find the following on a Map drawn to scale:
- Location. Relative position. Compass direction.
- Real ground distance between any two Consecutive points using a given scale.
- Latitude and Longitude in Global positioning system.

4. MEASUREMENT and MEASUREMENT UNITS

- Estimate, measure and calculate: Area of polygons, Volume of prisms and right circular cylinders, Surface area of right prisms Surface area of right cylinders.
- Adjust solutions for measurement and rounding – off errors.
- Scale drawings of plans: calculate values according to scale, build and
- interpret models.

DESIGN and PLANNING PROBLEMS:

- General Problem Solving.

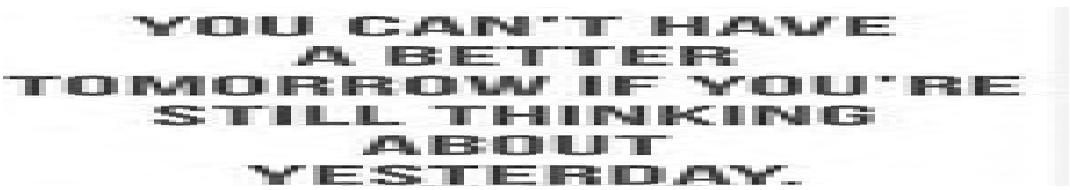
4. PROBABILITY:

- Meaning of Probability, Probability Scale.
- Ways of expressing Probability.
- Simple Contingency tables.
- Tree Diagrams.

LET'S GO

#THINKING FORWARD

- **MASTER THE BASICS FIRST**
- **HARDWORK NEVER KILLS A PERSON**
- **PARCTICE MAKES PERFECT!!!!**
- **I BELIEVE YOU CAN…. I TRUST YOU!!!!**



PREPARED ACTIVITIES

QUESTION 1

1.1 Ms Sakina Jacobs paid for the service of her car at Polokwane Multifranchise.

Invoice Name & Address	**Account Tax Invoice**		**Customer Name & Address**
Motus Financial Services P.O.Box 851 Edenvale 1609	Invoice Number: 23215874		Ms Sakina Jacobs 122 Flamingo Street Fauna Park 0699
	Op	Vehicle	
	6611	4100570	

Registration	FBT 209 L	Date of 1ST reg.	23.08.2019	Doc No.	132588
Model	Tucson 2.0	Selling Dealer	25A	Date of service	23.03.2021
Mileage	75416	VAT Reg.No	10465 25987	Order No	WA 3918902

PART NO/DESCRIPTION	**QUANTITY**	**UNIT PRICE**	**UNIT**	**AMOUNT**
Filter-Air Cleaner	1.00	182.00	Each	154.70
Dot 4 Brake Fluid 50	1.00	66.09	Each	56.18
Filter Fuel Pump	1.00	503.27	Each	427.78
Filter Assy-Air	1.00	304.11	Each	258.49
Battery	1.00	2469.92	Each	1234.96
Filter Assy-Engine Oil	1.00	114.32	Each	97.17
Gasket-Oil Plug	1.00	10.66	Each	9.06
Wurth Windscreen CLE	1.00	21.89	Each	18.61
BULK GTX Professional	4.00	95.00	Litres	380.00

	Goods value	VAT Rate	Taxable Amount (including Labour)	Net Total	4 106.95
Parts	2 636.95	15%	4 106.95	VAT	**B**
Surcharge	0.00			Total Due	4 722.90
Labour	**A**				
Sublet	0.00			Paid	

Use the information above to answer the questions that follow.

1.1.1 Name the Franchise Dealer that serviced Ms Sakina Jacobs's car. (2)

1.1.2 Calculate the value of A, the amount charged for the labour. (2)

1.1.3 Calculate the value of B, the amount of VAT paid by Ms Sakina Jacobs. (2)

1.1.4 Calculate the difference between the highest unit price and lowest unit price. (2)

Ms Sakina Jacobs' son, Piet is a Grade 9 learner in Taxila High. Due to the school time-tabling, the Grade 9 and 11 attend their classes on Monday, Wednesday and Friday starting from 7:30 to 14:00 every day. All the May 2021 activities were outlined in this calendar.

Source: https://www.dreamstime.com

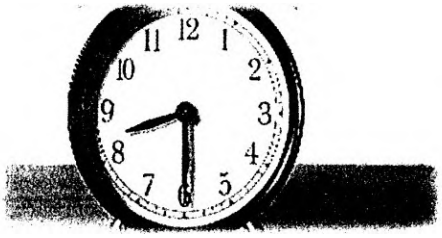
Use the information above to answer the questions that follow.

1.2.1 On which day will Piet dance like a chicken? (2)

1.2.2 Give a reason why Piet will not go to school on the 1st of May 2019. (2)

1.2.3 The clocks below indicate the starting time and end time of the EMS test respectively. (2)

Start



End

Determine the duration of the test.

1.2.4 Determine the number of hours will Piet spent at school in the first week of May 2019. (2)

QUESTION 2

2.1

The Department of Hospitality studies at Malope High School bakes brown bread in order to raise funds for the shortfall incurred in their day-to-day expenses.

The school charges the Department a fixed weekly cost of R800 for water and electricity.

The cost of producing one loaf of brown bread, including labour and ingredients, is R9,60. The brown bread is sold at R12,80 a loaf.

TABLE 1: Weekly cost of making brown bread

Number of loaves	0	40	80	120	160	B	300
Total cost (in rand)	800	1 184	1 568	A	1 920	3 200	3 680

The formula used to calculate the total cost per week is:

Total cost per week = **fixed weekly cost + (number of loaves** of bread x cost per loaf)

TABLE 2: Weekly income received from selling bread

Number of loaves	0	40	120	150	D	250	300
Total income (in rands)	0	512	C	1 920	2 560	3 200	3 840

******

Use the information above to answer the questions that follow.

2.1.1 Use the given formula to determine the values of **A** and **B** in TABLE 1. (4)

2.1.2 Write down a formula to determine the income received from selling bread. (2)

2.1.3 Determine the values of C and D in TABLE 2. (4)

2.1.4 Define the term "Break-even point" according to the given context. (2)

2.1.5 On **Annexure A**, the graph drawn represents the total cost per week, and then draws a line graph representing the income received. (4)

2.1.6 Determine the coordinates of break-even point. (2)

2.2

A family of five is living in a water-restricted area in Johannesburg where they use 87 litres of water per person per day from the municipality. They have decided to install eco-water storage tank to be able to use 250 litres per person per day. The family uses 87 litres per person of water from municipality and uses extra amount from water tank.

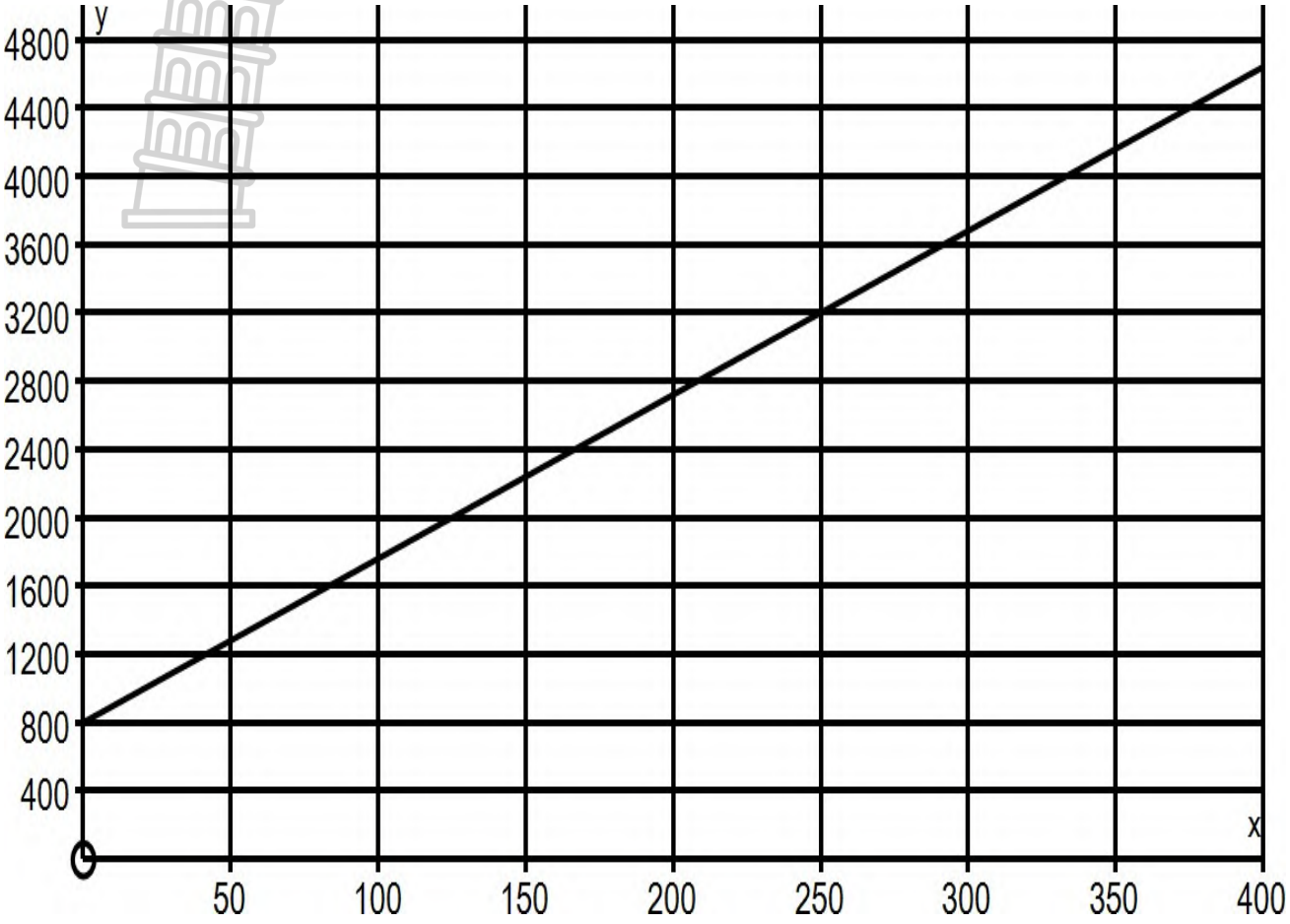
Tariff summary (in kilolitre)	**Tariff Rand per kiloliter(without VAT)**
0 – 6kl	Free
7 – 10kl	R7,14
11 – 15kl	R12,07
16 – 20kl	R17,65
20 – 30kl	R24,03
31 – 40kl	R25,81
41 and above	R32,27

Conversion: 1kl =1 000 litre

Use the information above to answer the questions that follow.

2.2.1 Calculate the total number of litres of water they use per month (30 days) from the municipality and from the tank? (4)

ANNEXURE A



QUESTION 3

Mr Selematsela, 68 years old, is a Consultant at ABC Company and earns a monthly gross salary of R65 000. He earns a performance bonus of 75% of his monthly salary in December. His pension contribution is 7,5% of his monthly gross salary and he belongs to a medical aid scheme with his 3 children.

INCOME TAX FOR 2021/2022 FINANCIAL YEAR	
Taxable income (rand)	**Rates of tax (Rands)**
1 – 216 200	18% of taxable income
216 201 – 337 800	38 916 + 26% of taxable income above 216 200
337 801 – 467 500	70 532 + 31% of taxable income above 337 800
467 501 – 613 600	110 739 + 36% of taxable income above 467 500
613 601 – 782 200	163 335 + 39% of taxable income above 613 600
782 201 – 1 656 600	229 089 + 41% of taxable income above 782 200
1 656 601 and above	587 593 + 45% of taxable income above 1 656 600

Rebates	**Tax threshold**	**Medical Tax Credits**
Primary : R15 714	Below age 65: R87 300	Tax payer: R235
Secondary: R8 613	Age 65 and over : R135 150	First Dependant: R235
Tertiary: R2 871	Age 75 and over : R151 100	Any Additional Dependant: R175

Use information above to answer the questions that follow.

3.1 Calculate Mr Selematsela's annual gross salary. (3)

3.2 Calculate Mr Selematsela's annual pension fund contribution. (2)

3.3 Determine Mr Selematsela's annual taxable income. (2)

QUESTION 4

4.1

Naomi and Thando decided to make a research on the number of car owners from Traffic Department in each province and the population of South African provinces in 2019.

TABLE 4: Car owners from Traffic Department and South African population in 2019.

PROVINCE	Population of the Province	Number of car owners per Province	% of the car ownee wners of the population.
Eastern cape	6 562 053	6 233 950	95
Free state	2 745 590	2 388 663	87
Gauteng	12 272 263	11 162 759	91
Kwazulu-Natal	10 267 300	9 856 608	96
Limpopo	5 404 868	4 918 430	91
Mpumalanga	4 039 939	3 555 146	88
Northern cape	1 145 861	916 689	80
North west	3 509 953	A	90
Western cape	5 822 734	5 240 461	90
TOTAL			

Source: Stats SA

Use the information above to answer the questions that follow.

4.1.1 Calculate the number of A, the car owners in North West. (3)

4.1.2 Write down the name of the province with the highest number of car owners. (2)

4.1.3 Calculate the mean of the population of the provinces. (3)

4.1.4 Calculate the probability (in simplest form) of picking a car owner with not more than 90% of the population. (3)

4.1.5 Identify the province(s) whose population data would be used to determine Quartile 2. (2)

4.1.6 Calculate the range of the number of car owners per province and write the amount in words. (4)

Learner	Age (Years)	Height (m)	Mass (kg)	BMI
Learner 1	14	1.65	65 kg	
Learner 2	18	1.7	72 kg	**A**
Learner 3	16	1.62	68 kg	23.6
Learner 4	16	1.5	65 kg	**B**
Learner 5	18	1.55	72 kg	
Learner 6	15	1.56	66 kg	27.1
Learner 7	16	1.55	62 kg	
Learner 8	17	1.58	63 kg	25.2
Learner 9	15	C	69 kg	27
Learner 10	16	1.55	53 kg	22
Learner 11	17	1.66	81 kg	
Learner 12	17	1.63	71 kg	27.7

Source: StatsSA

Use the information above to answer the questions that follow.

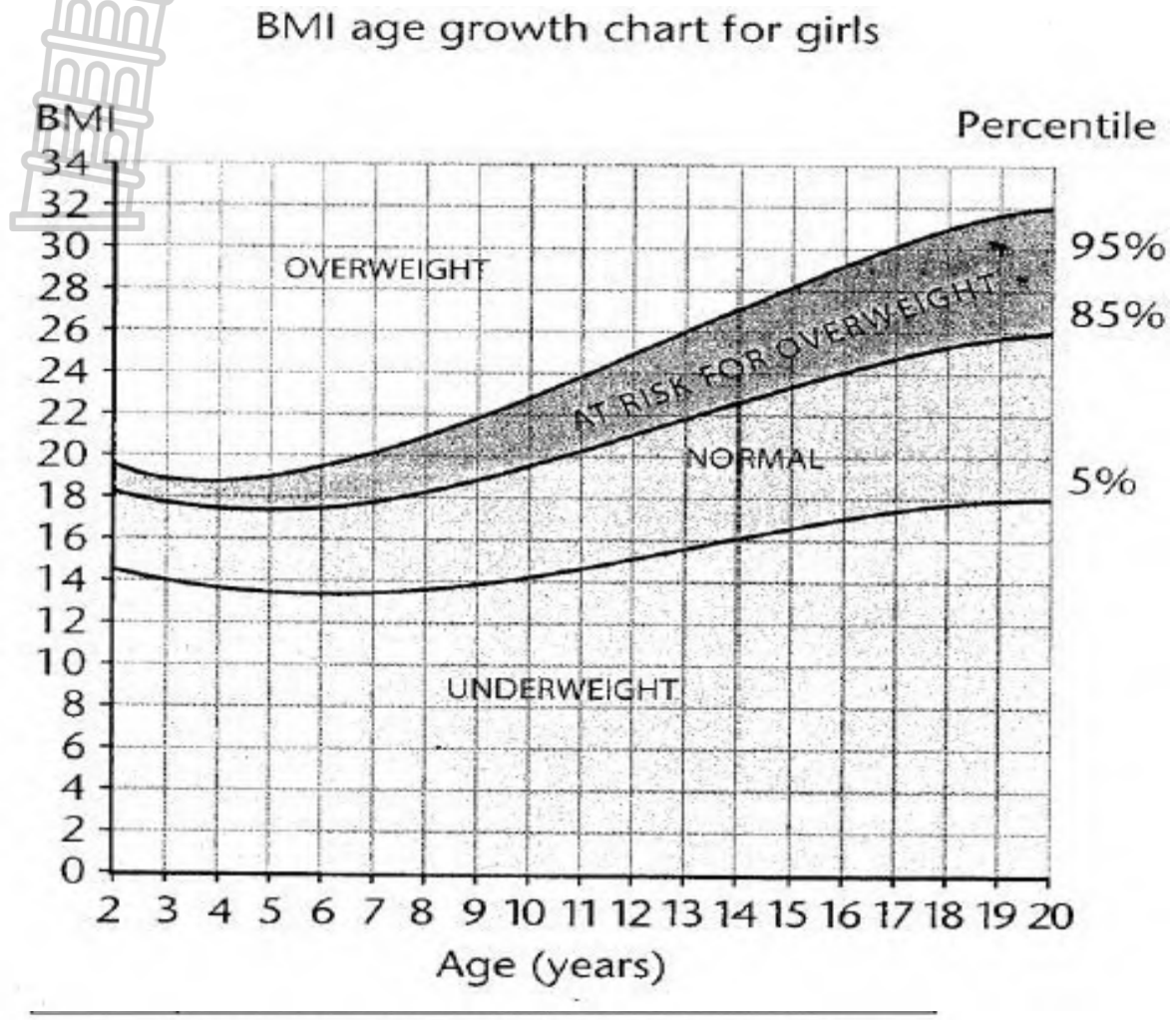
4.2.1 Calculate the BMI to determine the status of Learner 4 (B). (2)

Use this formula: $\text{BMI} = \frac{\text{weight (kg)}}{\text{Height (m)}^2}$

4.2.2 By using the BMI formula, determine the height of Learner 9 if her BMI is 27. (4)

4.3

The BMI is used to determine the weight status of individuals. The sports organizer downloaded the following BMI age growth charts for girls to determine their weight status for this sample.



Source: Adapted from EC

4.3.1 Determine the BMI range for a normal weight status. (2)

4.3.2 Learner 6 is determined to move from being overweight to a normal weight. Calculate the total weight she must lose to achieve her aim. (3)

Use TABLE 1 to select the definition for EACH of the following concepts.
NOTE: Write down only the letter (A–G) of the correct definition.

1.1.1 Profit (2)

1.1.2 Mean (2)

1.1.3 Length of the radius (2)

1.2 A gold coin shop buys and sells gold Krugerrand coins. The shop bought a one-ounce gold coin for R14 960 at 10:15 and sold it for R18 700 5 hours and 50 minutes later.

1.2.1 Calculate the profit that the shop made on this one-ounce gold coin. (2)

1.2.2 Write down the exact time when the coin was sold. (2)

1.2.3 The diameter of a one-ounce gold coin is 32,8 mm. A gold coin is placed in the centre of a square box of side length 71,8 mm, as shown below.

1.4 TABLE 2 below shows the mean monthly rainfall (in mm) and the mean number of rainy days per month for two South African cities.

TABLE 2: MEAN MONTHLY RAINFALL AND MEAN NUMBER OF RAINY DAYS PER MONTH FOR KIMBERLEY AND DURBAN

MONTH	MEAN MONTHLY RAINFALL (mm)		MEAN NUMBER OF RAINY DAYS	
	DURBAN	KIMBERLEY	DURBAN	KIMBERLEY
January	126	93	10	7
February	142	81	9	7
March	120	88	9	7
April	60	68	6	6
May	39	6	4	2
June	35	6	3	1
July	39	3	3	1
August	63	9	5	1
September	84	18	7	2
October	107	27	10	4
November	117	39	12	5
December	93	86	10	6

[Source: www.myweather2.com]

Use TABLE 2 above to answer the questions that follow.

1.3 Naomi buys a 2 ℓ bottle of concentrated juice.

She adds water to make 14 ℓ of diluted juice at a total cost of R44,95.

She wants to serve the diluted juice in glasses. Each glass will contain 0,175 ℓ of diluted juice.

[Adapted from graphics24.co.za]

1.3.1 Calculate the cost per litre of the diluted juice. (2)

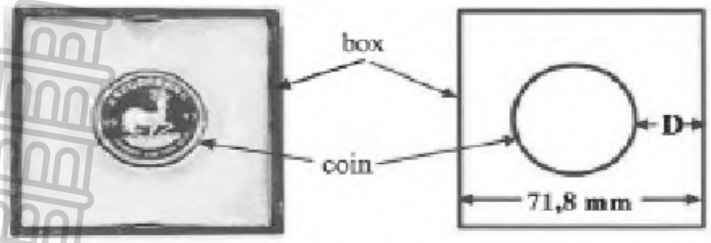
1.3.2 Determine, in simplified form, the ratio of:

volume of concentrated juice : volume of water (2)

1.3.3 Determine the exact number of glasses of diluted juice that can be served. (2)

PHOTOGRAPH OF GOLD COIN IN SQUARE BOX

DIAGRAM



(a) Calculate the length of the radius of the coin. (2)

(b) Determine the shortest distance (**D**) between the edge of the coin and the side of the square box. (2)

1.4.1 Arrange the mean monthly rainfall for Durban in ascending order. (2)

1.4.2 In which month does Kimberley receive the lowest mean monthly rainfall? (2)

1.4.3 Write down the modal number of rainy days for the first six months of the year for Durban. (2)

1.4.4 In which month does Kimberley have a higher mean monthly rainfall than Durban? (2)

1.4.5 During which month(s) is the mean monthly rainfall in Durban the same? (2)
[30]

FEB 2018
QUESTION 1

1.1

A furniture store offers a dining-room suite for sale. It should be paid off in 42 equal monthly instalments of R1 078,26 (14% VAT included). No deposit is required for this offer.

[Source: www.rochester.co.za]

1.1.1 Express (in years) the total repayment period for this offer. (2)

1.1.2 Determine the total repayment cost for this dining room suite. (2)

1.1.3 The advertised price for this dining room suite is R29 999,00. The store offers 15% discount on the advertised price if the purchase is settled immediately in ONE payment.

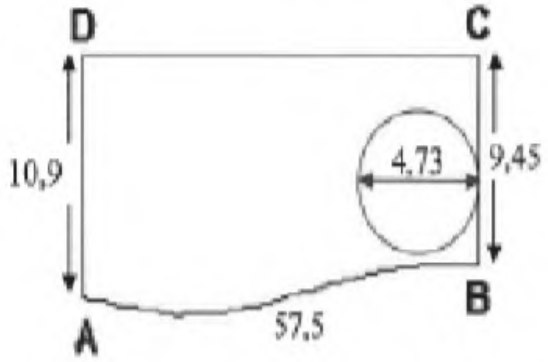
Calculate the value of the discount amount offered. (2)

1.2 The photograph and sketch below show a circular swimming pool in a portion of Annette's garden.

CIRCULAR SWIMMING POOL

[Source: www.megaide.se]

SKETCH OF THE SWIMMING POOL IN THE GARDEN WITH DIMENSIONS (in metres)



NOTE: The curved distance for AB is 57,5 m.

1.2.1 Give, in simplified form, the ratio of distance **AD** to distance **CB**. (2)

1.2.2 The perimeter of **ABCD** is 125,92 m.

Calculate the distance **CD**. (2)

1.2.3 Write down the length of the radius of the pool. (2)

1.2.4 A fence will be erected along the curved side **AB** at a cost of R97,56 per running metre.

Calculate the total cost of erecting the fence. (2)

1.3 TABLE 1 below shows the weather forecast with maximum and minimum temperatures for three cities for 29 April 2017.

TABLE 1: WEATHER FORECAST WITH MAXIMUM AND MINIMUM TEMPERATURES OF THREE CITIES FOR 29 APRIL 2017

	TEMPERATURE IN °C (Celsius)		WEATHER FORECAST	
CITY	MAXIMUM	MINIMUM	SUN AND CLOUD COVER	% CHANCE OF RAIN
A	24	6		59
B	32	26		0
C	8	−7		3

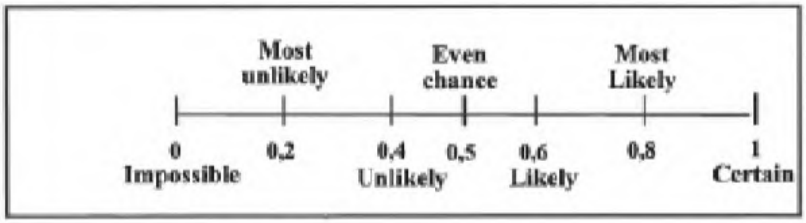
[Adapted from AccuWeather.com]

Use TABLE 1 above to answer the questions that follow.

1.3.1 Identify the city with the lowest temperature. (2)

1.3.2 Calculate the temperature range for City **C**. (2)

1.3.3 A probability scale in words and as decimal fractions is given below.



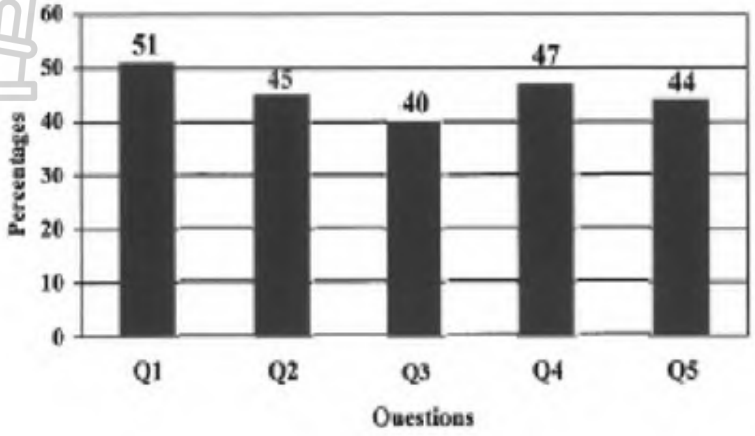
Use the probability scale and TABLE 1 above to answer the questions that follow.

(a) Identify the city that has NO chance of rain. (2)

(b) Write down, in words, the chance of rain for City **A**. (2)

1.4 361 948 candidates wrote Mathematical Literacy Paper 1 in 2016. The paper had a total of 150 marks and candidates had three hours to complete the paper. The graph below shows the average percentage mark per question for this paper.

AVERAGE PERCENTAGE MARK PER QUESTION FOR MATHEMATICAL LITERACY PAPER 1



[Source: *2016 NSC Examination Diagnostic Report*]

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

1.4.1 Name the type of graph used to represent the data. (2)

1.4.2 Express the number of candidates who wrote this paper in words. (2)

1.4.3 Identify the question in which the candidates obtained the second lowest average percentage mark. (2)

1.4.4 Determine (in minutes) the average time per mark required for this paper. (2)
[30]

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

1.4.1 Name the type of graph used to represent the data. (2)

1.4.2 Express the number of candidates who wrote this paper in words. (2)

1.4.3 Identify the question in which the candidates obtained the second lowest average percentage mark. (2)

1.4.4 Determine (in minutes) the average time per mark required for this paper. (2)
[30]

NOV 2018

QUESTION 1

1.1 Happy Life Superstore advertised the specials below for the annual Black Friday in 2017.

<table>
<tr>
<td> 
2 ℓ bottles
Coke, Sprite and Fanta
30% OFF
R11 each</td>
<td> 
Ariel
50% OFF
R45 each</td>
</tr>
<tr>
<td> 
Sunlight
35% OFF
R18</td>
<td> 
Classic
45% OFF
R15 each</td>
<td> 
Liquifruit
40% OFF
R22 each</td>
<td> 
Weetbix
Save R20
R44</td>
</tr>
<tr>
<td> 
Jacobs
Save R35
R65 each</td>
<td> 
Airborne
Save R25
R30 per pack</td>
<td> 
hth
Save R70
R250</td>
<td> 
Gaviscon
Save R30
R43</td>
</tr>
</table>

[Source: www.checkers.co.za]

NOTE:

- 1 ℓ = 1 000 mℓ
- ALL amounts given INCLUDE the discount

Study the advertisement above to answer the questions that follow.

1.1.1 Write down the number of day(s) on which these prices are valid. (2)

1.1.2 Calculate the original price of hth before the saving. (2)

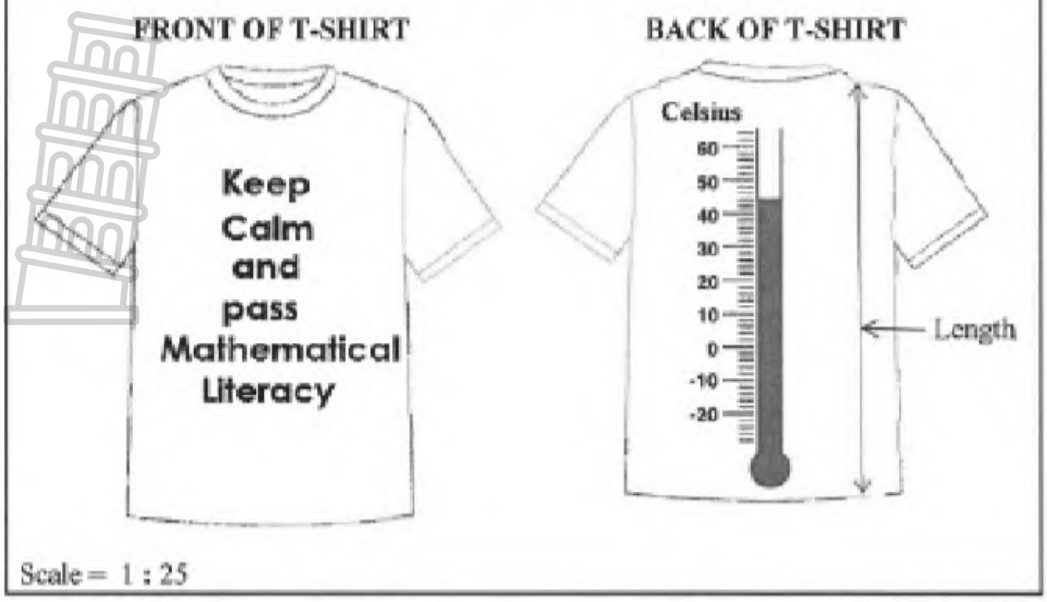
1.1.3 Write down the name of the product which is now half price. (2)

1.1.4 Convert 750 mℓ to litres. (2)

1.1.5 Calculate the total price of ONE 2 ℓ-bottle of Coca Cola and TWO 2 ℓ-bottles of Fanta. (2)

1.1.6 Arrange ALL the sale prices in ascending order. (2)

1.2 The picture below is a scaled drawing of a T-shirt for Grade 12 learners.



Scale = 1 : 25

1.2.1 Calculate the number of letters needed to print the logo on the front of the T-shirt. (2)

1.2.2 Write down the temperature displayed on the thermometer in °C. (2)

1.2.3 Explain the meaning of the scale in the drawing above. (2)

1.2.4 Measure the length of the back of the T-shirt in mm, as indicated in the drawing. (2)

1.3 The Two Oceans Marathon and the Comrades Marathon are two of the most popular ultramarathons in the world.

TABLE 1 below shows the dates, distances and entry fees of these marathons.

TABLE 1: TWO OCEANS MARATHON VS COMRADES MARATHON

	TWO OCEANS	COMRADES
Date (2017)	15 April 2017	4 June 2017
Distance	56 km	89 km
Entry fee	R520,00	R460,00

[Adapted from www.capetownmagazine.com and www.news.comrades.com]

Use TABLE 1 above to answer the questions that follow.

1.3.1 Which race took place first? (2)

1.3.2 Which one of the two races had the longest distance? (2)

1.3.3 Determine the difference between the entrance fee of the Two Oceans Marathon and the entrance fee of the Comrades Marathon. (2)

1.4 The Comrades Marathon Association (CMA) has issued its medical statistics for the race held on Sunday 4 June 2017.
Start of the race: 05:30
End of the race: 17:30

TABLE 2 shows the medical statistics on race day.

TABLE 2: MEDICAL STATISTICS

Athletes starting the race	17 031
Athletes finishing the race	13 852
Athletes treated in the medical tent	400
Hospital-treated athletes	90
Hospital-admitted athletes	40

[Adapted from http://www.runnersworld.co.za]

Use TABLE 2 above to answer the questions that follow.

1.4.1 Write down the maximum time given to the athletes to complete the Comrades Marathon. (2)

1.4.2 State if the medical statistics data is discrete or continuous. (2)

1.4.3 Write down the ratio of athletes starting the race to the athletes finishing the race. (2)
[32]

NOV 2019

QUESTION 1

1.1 In 2019/20 the South African government increased the social grants as indicated in TABLE 1 below.

TABLE 1: SOCIAL GRANTS FOR 2019–2020

TYPES	MARCH 2019	MARCH 2020
Pension allowances younger than 75	R1 695	R1 780
Pension allowances older than 75	R1 715	R1 800
War veteran allowances	R1 715	R1 800
Disability allowances	R1 695	R1 780
Foster care allowances	R960	R1 000
Care dependent allowances	R1 695	R1 780
Child support allowances	R405	R425

[Adapted from www.treasury.gov.za/Rapport]

Use TABLE 1 above to answer the questions that follow.

1.1.1 Is the type of data in TABLE 1 numerical data or categorical data? (2)

1.1.2 Identify the modal allowance amount for March 2020. (2)

1.1.3 Arrange the social grants for March 2019 in descending order of value. (2)

1.1.4 Determine (in rand) the increase in the disability allowances for March 2020. (2)

1.1.5 Write down the type(s) of allowances which represents the highest amount in March 2020. (2)

1.2 Naomi owns a spaza shop in Gugulethu. She buys her stock from a wholesaler in Cape Town. Below is some of the stock that she buys weekly.

 2,5 kg Hullets white sugar Cost price: R32,99 Total selling price: R42,90	 400 g Koo Hot and Spicy Chakalaka Cost price: R10,99 Total selling price: R14,30	 2 kg Tastic long grain parboiled rice Cost price: R22,99 Total selling price: R29,20

[Adapted from www.latestspecials.co.za]

Use the information above to answer the questions that follow.

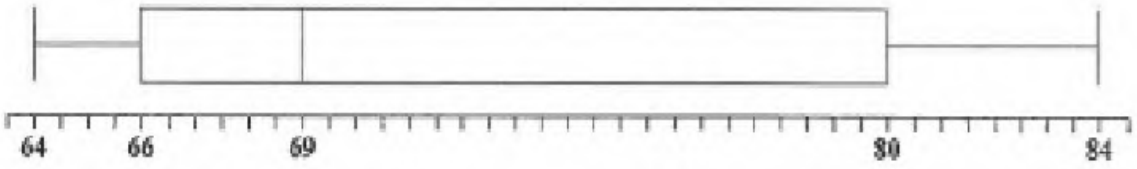
1.2.1 Convert 400 g to kg. (2)

1.2.2 Determine the profit she will make if she sells a can of Hot and Spicy Chakalaka. (3)

1.2.3 She buys a 2,5 kg pack of white sugar and repacks the sugar into 250 g packets.
Determine how many packets she will be able to get from ONE pack of 2,5 kg sugar. (3)

1.2.4 The 2 kg Tastic rice is divided into 8 smaller packets.
Calculate the selling price of ONE small packet. (2)

1.3 Candidates sat for the National Senior Certificate examinations in November 2018. The box-and-whisker plot below shows the five-number summary of the average pass percentages for Mathematical Literacy.



[Adapted from *NSC 2018 School Subject Report*]

Use the box-and-whisker plot above to answer the questions that follow.

1.3.1 Write down the pass percentage that represents the following:

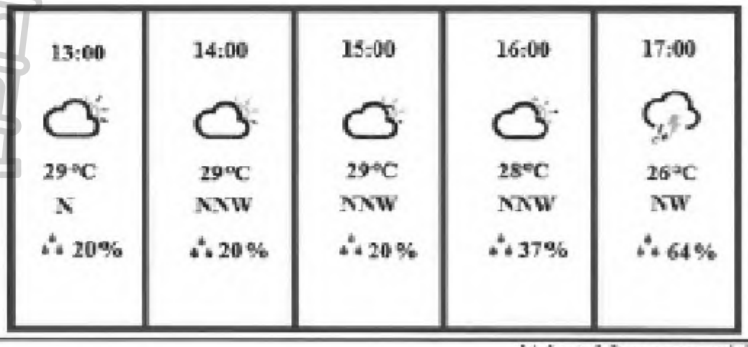
(a) The median (2)

(b) Quartile 3 (2)

1.3.2 Determine the difference between the highest and the lowest pass percentage. (2)

1.4 Kimberley experienced heavy thundershowers on 11 March 2019. Celeste, a resident of Kimberley, studied the weather forecast below relating to the following day to determine whether it was necessary to take an umbrella to work.

HOURLY WEATHER FORECAST FOR KIMBERLEY – 12/03/2019



[Adapted from www.rainboo.co.za]

Use the information above to answer the questions that follow.

1.4.1 At what time of the day is the temperature expected to be 28 °C? (2)

1.4.2 Determine the probability that it will rain when Celeste leaves work at 2:30 p.m. (2)

[30]

FINANCE

NOV 2017
QUESTION 2

2.1 TABLE 3 below shows the bus fare (in rand), including 14% VAT, for a single trip.

TABLE 3: BUS FARE IN RAND FOR A SINGLE TRIP

	Port Elizabeth	Grahamstown	King William's Town	Queenstown	Aliwal North	Bloemfontein	Welkom
Port Elizabeth		305	320	395	410	435	515
Grahamstown	305		305	385	410	435	515
King William's Town	320	305		350	410	435	465
Queenstown	395	385	350		365	410	455
Aliwal North	410	410	410	365		410	435
Bloemfontein	435	435	435	410	410		335
Welkom	515	515	465	455	435	335	

[Source: www.greyhound.co.za]

Use TABLE 3 above to answer the questions that follow.

2.1.1 Write down the SECOND highest bus fare for a single trip between two cities. (2)

2.1.2 Between which two cities is the single bus fare R350,00? (2)

2.1.3 A person travels from Port Elizabeth to Bloemfontein via another city, City X, and uses two different buses. The total cost for this one-way trip is R755.

(a) Calculate the cost from Port Elizabeth to City X. (2)

(b) Hence, identify City X. (2)

2.1.4 Determine the cost, excluding 14% VAT, of a single bus fare of R365,00. (3)

2.1.5 Lindiwe travels from Queenstown to Bloemfontein and back once a month.

Calculate her total return travelling cost for ONE year. (4)

2.2 ANNEXURE A shows an adapted municipal account statement (property rates and services account) of Mr Fortune.

Use ANNEXURE A to answer the questions that follow.

2.2.1 Write down the valuation date (month and year) of Mr Fortune's property. (2)

2.2.2 Name the municipal services that Mr Fortune is charged for. (2)

2.2.3 Determine the end date of the reading period of this statement. (2)

2.2.4 Show how the daily average water consumption of 0,522 kℓ was calculated. (2)

2.2.5 Name and explain which service on this statement is a variable expense. (3)

2.2.6 Determine the missing value:

(a) **A** (2)

(b) **B** (2)

2.2.7 Calculate the monthly sewerage rate (excluding 14% VAT) per square metre for this property. (2)

2.2.8 Write down the unpaid amount for December 2016. (2)

2.2.9 Mr Fortune paid R1 800 on 15 January 2017.

Name the type of rounding he used to obtain this amount. (2)

2.3 Rajesh exchanged a gift of £360,00 to South African rand at a bank.

The exchange rate was **R1,00 = £0,05773**.

The bank charged 1,95% commission on the amount exchanged.

Rajesh then invested R5 000 of his gift in a fixed deposit account for $1\frac{1}{2}$ years at a compound interest rate of 6,3%, per annum.

[Adapted from http://www.xe.com and www.fnb.co.za]

2.3.1 Calculate (in pounds) the amount of commission Rajesh paid. (2)

2.3.2 Convert £360,00 to rand. (3)

2.3.3 Calculate (without the use of a formula) the value of the fixed deposit at the end of $1\frac{1}{2}$ years. Show ALL the steps of the calculation. (5)
[46]

FEB 2018
QUESTION 2

2.1 Mapotjo contributes a regular monthly amount from her salary towards a retirement annuity. This amount is deducted from her salary through a stop order on the 15th day of each month.

Below is a summary of the statement of her retirement annuity, as on 10 May 2017.

Policy number	0097541
Maturity date	1 November 2029
Monthly contribution	R740,22
Payment frequency	Monthly
Current death value	R189 817,05
Retirement value – Lower inflation rate	R536 523,25
Retirement value – Higher inflation rate	R940 465,89

[Source: www.my portfolio.co.za]

Use the information above to answer the questions that follow.

2.1.1 Define the concept *stop order*. (2)

2.1.2 Calculate the difference between the TWO retirement values. (2)

2.1.3 Determine the number of monthly contributions that still need to be paid by Mapotjo before the policy matures. (4)

2.1.3 Determine the number of monthly contributions that still need to be paid by Mapotjo before the policy matures. (4)

2.1.4 Determine the total value of the contributions over five years if her monthly contribution remains the same. (3)

2.1.5 Fill in the missing word(s) to make the following statement TRUE.

An annual increase in the monthly contribution would result in ... maturity value. (2)

2.1.6 Show that if her monthly contribution increased by 8,5%, then the new monthly deduction from her salary would be R803,14. (2)

2.2 Zoom Car Wash employs a supervisor, eight general cleaners and a machine operator. The cleaners work for seven days a week, where Monday to Saturday is regarded as normal working hours.

TABLE 2 below shows the hourly wage rate for EACH of the worker groups for 2016 and 2017.

TABLE 2: ZOOM CAR WASH NORMAL HOURLY WAGE RATE (IN RAND PER HOUR) FOR 2016 AND 2017

WORKER GROUP	2016	2017
Supervisor	**A**	21,93
General cleaners	16,40	17,76
Machine operator	17,90	19,39

[Adapted from Mywage.co.za]

NOTE:

- Normal working hours: 08:30 to 17:30
- Overtime is paid at time and a third of the normal hourly rate.
- The Sunday wage rate is 150% of the normal hourly rate.

Use TABLE 2 above to answer the questions that follow.

2.2.1 Calculate the 2017 overtime hourly rate for a general cleaner. (2)

2.2.2 Determine the total wage a machine operator would earn for working only THREE Sundays. (5)

2.2.3 All the workers received a wage increase at the beginning of 2017.

(a) Show, by calculation, that the wage increase was 8,3%. (2)

(b) Calculate the missing value **A**. (3)

2.2.4 A general cleaner worked normal working hours for a full week.

Calculate his total weekly wage. (3)

2.3 TABLE 3 below shows the record of the vehicles washed on a particular day.

TABLE 3: RECORD OF VEHICLES WASHED ON A PARTICULAR DAY

CATEGORY	NUMBER	COST PER VEHICLE
Bakkies	7	R70
Cars	35	R50
Minibus	4	R75

Calculate the total income received for the vehicles washed on this particular day. (4)

2.4 The supervisor at Zoom Car Wash has to report for duty 30 minutes earlier than the normal starting time, from Monday to Saturday but leaves work at the same time as the other workers. He receives a monthly salary, works every Sunday and is paid overtime.

TABLE 4 below shows a monthly salary slip (some data omitted) for the supervisor.

TABLE 4: MONTHLY SALARY SLIP FOR THE SUPERVISOR

SALARY SLIP			
Name of employer	Zoom Car Wash		
Address	12 Stateway Welkom, 9460		
Name of employee	M Ncubuka		
ID No.: 890106 5387 000	Employee No.: 124567		
Position	Supervisor		
Payment period: 1 November 2017 to 30 November 2017			
	RATE	**TOTAL HOURS (hrs × days × weeks)**	**AMOUNT IN RAND**
Normal hours worked	21,93	...	**B**
Sunday hours (1,5 normal rate)	32,90	9 × 1 × 4	1 184,40
Overtime hours worked/ (1 ½ of normal rate)	...	0,5 × 6 × 4	350,88
TOTAL Gross Salary			6 272,16
UIF (1% of gross salary)			[illegible]
Net salary			**6 209,44**

[Source: www.zoomhandcarwash.com]

NOTE: Employer and employee each contribute a monthly amount of 1% of the employee's gross salary for UIF.

Use TABLE 4 above to answer the questions that follow.

2.4.1 Explain the term *employer*. (2)

2.4.2 State ONE benefit of contributing towards the UIF. (2)

2.4.3 Calculate:

(a) The value of B (3)

(b) The total UIF amount that must be paid on behalf of M Ncubuka to the Department of Labour (3)
[44]

NOV 2018
QUESTION 2

2.1 ANNEXURE A shows the student fees statement for Tamryn Abrahams, a second-year Architecture student at the University of Cape Town (UCT).

Use ANNEXURE A to answer the questions that follow.

2.1.1 Explain the meaning of the term *interest* with reference to the student fees statement. (2)

2.1.2 Write down the balance (excluding interest) that was brought forward on the last day of the previous year. (2)

2.1.3 Calculate the monthly interest rate that was used on the overdue fees for the previous year. (3)

2.1.4 Write down the code and the name of the module/course that is the most expensive. (2)

2.1.5 Show how the amount of R6 317,70 was calculated. (2)

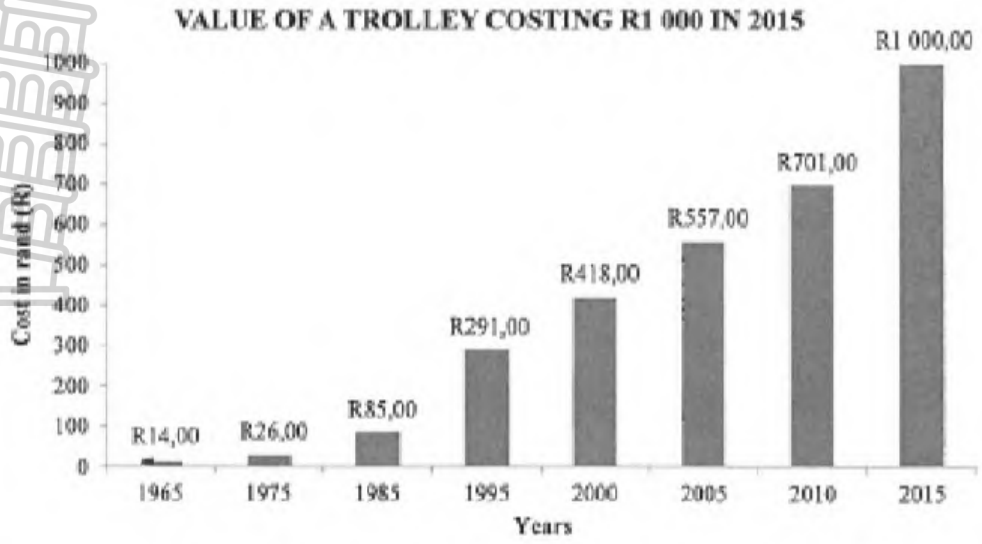
2.1.6 Calculate the total amount debited to this account for the courses studied in the 2017 academic year including interest on overdue fees in 2017. (3)

2.1.7 State the payment method used to transfer money into this account. (2)

2.1.8 A family friend paid the balance of R40 386,60 on condition that the amount could be paid back in equal monthly instalments, interest free.

Show how the monthly instalment of R8 077,32 was calculated if the first payment was due on 1 November 2017 and the last payment was due on 1 March 2018. (2)

2.2 The graph below shows the effect of inflation from 2015 going back 50 years.



Below are certain South African items and their prices for the years 1970 and 2015.

		PRICE IN 1970	PRICE IN 2015
Spur burger		R0,30	R62,90
Cheddamelt steak		R0,50	R104,90
Ricoffy 750 g		R0,25	R75,00
Nestlé condensed milk		R0,10	R19,00

[Source: www.inflation.eu]

Use the information above to answer the questions that follow.

2.2.1 Explain the term *inflation* within the given context. (2)

2.2.2 Write down the price of a Spur burger in 1970. (2)

2.2.3 Calculate by how much the cost, in rand, of a trolley had increased from 2000 to 2005. (3)

2.2.4 Calculate the percentage increase of Ricoffy from 1970 to 2015.
You may use the following formula:

$$\text{Percentage increase} = \frac{\text{new amount} - \text{original amount}}{\text{original amount}} \times 100\ \%$$

(3)

2.2.5 A cheddamelt steak was sold for R104,90 at a percentage profit of 17,5%. Determine the cost price. (2)

2.3 TABLE 3 below shows the national budget and education budget of South Africa for 2017/18.

TABLE 3: NATIONAL BUDGET AND EDUCATION BUDGET OF SOUTH AFRICA FOR 2017/2018

NATIONAL BUDGET OF SOUTH AFRICA (IN RAND)		EDUCATION BUDGET OF SOUTH AFRICA (IN RAND)	
Economic affairs and agriculture	241,6 billion	Basic education	216,7 billion
Defence and public safety	198,7 billion	University subsidies	31,6 billion
Health	187,5 billion	Education administration	15,8 billion
General admin	70,7 billion	Skills development levy institutions	21,1 billion
Local development and infrastructure	195,8 billion	National student financial aid scheme (NSFAS)	15,3 billion
Debt service costs	162,4 billion	Technical and vocational education and training	7,5 billion
Social protection	180,0 billion	Other	12,5 billion
Education	320,5 billion		

[Adapted from www.graphics24.com]

Use TABLE 3 above to answer the questions that follow.

2.3.1 Which of the amounts below represents the economic affairs and agriculture budgets?

A 24 160 000
B 241 600 000 000
C 241 600 000
D 24 160 000 000 000 (2)

2.3.2 Explain the term *budget* within the context above. (2)

2.3.3 Write down the item which receives the third most money from the education budget. (2)

2.3.4 Calculate the percentage of the total education budget that is allocated to the NSFAS. (3)

2.3.5 University subsidies comprise about 9,86% of the total education budget. Estimate the combined budget, as a percentage, for education administration and the NSFAS. (2)
[41]

NOV 2019

QUESTION 2

2.1 ANNEXURE A shows an extract from Mr Daniels' monthly municipal statement including the residential water and sewer tariff tables.

Use the information in ANNEXURE A and answer the questions that follow.

2.1.1 Write down the market value in words. (2)

2.1.2 Calculate the VAT amount for the sewer monthly charge on a stand larger than 2 000 m^2. (2)

2.1.3 Write down the unit of measurement that was used for the meter readings. (2)

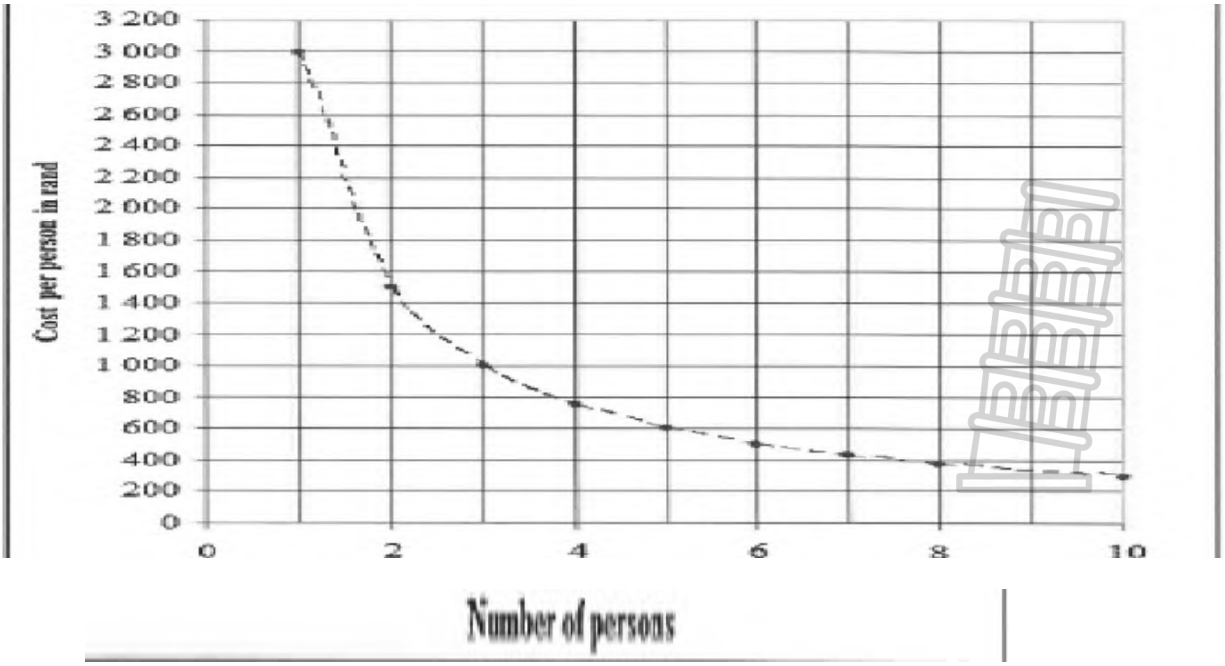
2.1.4 Determine the value of A. (2)

2.1.5 Use the stepped residential water tariff table to calculate the value of B, the total amount for water usage. (4)

2.2 Josh owns a specially designed refuse removal truck. He hires out this truck at a daily rate of R3 000, excluding fuel. A group of friends decided to use the truck for the day to carry their refuse to the nearby dumping ground.

The graph below indicates the amount each person will pay depending on the number of friends.

COST OF HIRING THE TRUCK



Use the graph above to answer the questions that follow.

2.2.1 State the type of proportion represented in the graph above. (2)

2.2.2 Write down the number of friends in the group if each paid R500. (2)

2.2.3 Calculate the amount each person will pay if 7 friends hired the truck. (3)

2.2.4 Josh saved R500,00 each month since earning his first profit. He has now accumulated an amount of R17 000,00.

TABLE 2 below shows the simple interest rates that would be earned over fixed time periods for amounts ranging from R10 000,00 to R99 999,00.

TABLE 2: SIMPLE INTEREST RATES FOR FIXED TIME PERIODS

TERM (MONTHS)	R10 000–R24 999	R25 000–R99 999
	INTEREST RATE PER YEAR	INTEREST RATE PER YEAR
6	7,12%	7,23%
12	7,76%	8,08%
18	7,87%	8,41%
24	8,08%	8,57%
36	8,30%	8,84%
48	8,46%	9,00%

[Adapted from www.capitecbank.co.za]

Use TABLE 2 above to answer the questions that follow.

(a) Determine (in months) how long he took to save R17 000,00. (2)

(b) Write down the interest rate he will get if he invests his money for 3 years. (2)

(c) Determine (rounded to the nearest R100) the amount of interest Josh will earn if he invests his accumulated savings for 3 years. (3)

(d) Sifiso wants to invest R24 000,00 for 48 months instead of 12 months.

Calculate the difference in percentage points for the interest rate. (2)

(e) Write down the minimum number of years and months a person must invest R25 000,00 to earn an interest rate of 8,41%. (3)

2.3 The government receives income from various sources, like tax and loans. This income is then distributed to the different sectors.

TABLE 3 below shows the source of the income and the expenditure for the 2019/20 tax year.

TABLE 3: GOVERNMENT SOURCES OF INCOME AND EXPENDITURE FOR 2019/20

INCOME		EXPENDITURE	
SOURCE	**AMOUNT (in billion rand)**	**SECTOR**	**AMOUNT (in billion rand)**
Tax	1 370	Social Development	278,4
Loans	242,7	Basic Education	262,4
Other income	180,3	Health	222,6
Non-tax income	31,5	Peace and Safety	211,0
		Economic Development	209,2
		Community Development	208,5
		Debt Service Cost	202,2
		Further Education and Training	112,7
		Other	**B**
TOTAL	**A**		**1 823,72**

[Adapted from www.treasury.gov.za/Rapport]

Use TABLE 3 above to answer the questions that follow.

2.3.1 Write the amount received from loans as a number in millions. (2)

2.3.2 Calculate the missing value **A**. (2)

2.3.3 Calculate the missing value **B**. Show ALL calculations. (4)

2.3.4 Determine the amount allocated for Community Development as a percentage of the total expenditure. (3)

[42]

MEASUREMENT

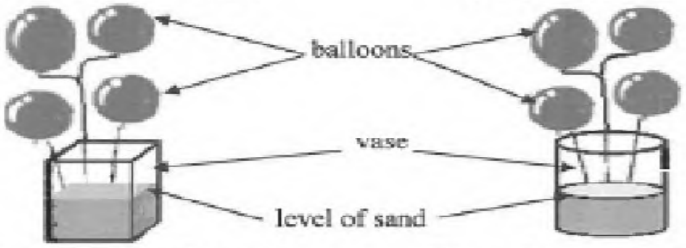
NOV 2017
QUESTION 3

3.1 Happy Life High School makes table centrepieces, each consisting of four balloons in a vase filled with sand, for the 2017 Ball.

The school expects 240 people at the ball. Each table will accommodate a maximum of 8 people and ONE centrepiece will be placed on each table.

The diagrams below show the two types of centrepieces that will be used.

RECTANGULAR VASE **CYLINDRICAL VASE**



Dimensions of rectangular vase:

Length = 10 cm
Width = 6 cm
Height = 28 cm

Dimensions of cylindrical vase:

Diameter = 12 cm
Height = 28 cm

[Adapted from google.com]

Use the information above to answer the questions that follow.

3.1.1 Calculate the minimum number of balloons required for all the centrepieces. (2)

3.1.2 Each vase will have a decorative ribbon around it. The ribbon will overlap 1 cm.

Calculate the minimum length of decorative ribbon needed to decorate ONE rectangular vase.

You may use the following formula:

Length of decorative ribbon (in cm) = 2 × (length + width) + 1 (3)

3.1.3 Calculate (in cm^3) the volume of the cylindrical vase.

You may use the following formula:

Volume of a cylinder = π × (radius)^2 × height, using $\pi = 3,142$ (3)

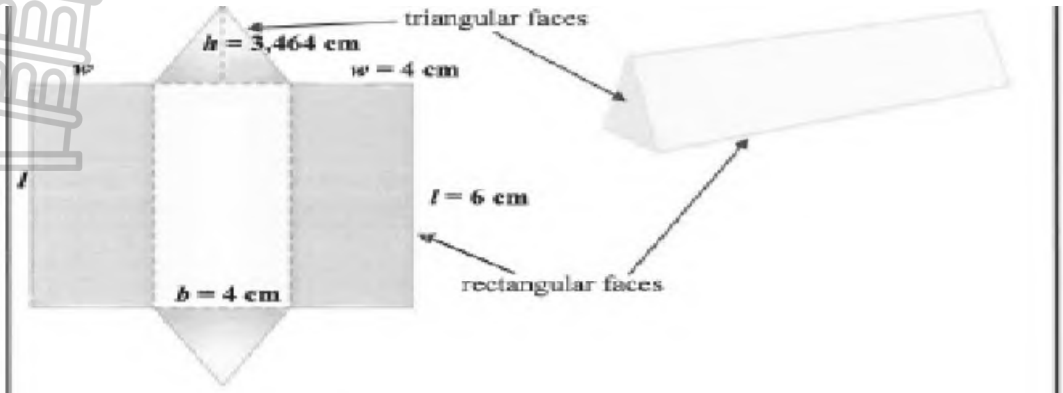
3.1.4 The volume of the rectangular vase is 1 680 cm^3.

- 45% of the vase will be filled with sand.
- The mass of 1 cm^3 of sand is 1,53 g.

Calculate (in kg, rounded off to TWO decimal places) the mass of sand required for ONE rectangular vase. (4)

3.2 The ladies attending the ball will each receive a triangular-shaped gift box. The box is made up of three identical rectangular faces and two identical triangular faces, as shown in the diagrams below. Each box will be covered in gold foil.

Net of triangular-shaped gift box **Picture of triangular-shaped gift box**



Dimensions of rectangular faces:

- Length (l) = 6 cm
- Width (w) = 4 cm

Dimensions of triangular faces:

- Base (b) = 4 cm
- Height (h) = 3,464 cm

3.2.1 Calculate (in cm^2) the area of ONE triangular face of the gift box.

You may use the following formula:

Area of a triangle = $\frac{1}{2}$ × base × height (3)

3.2.2 Hence, determine the total surface area (in cm^2) of the box.

You may use the following formula:

Total surface area of a triangular prism
= 2 × (area of triangular face) + 3 × length × width (4)

3.2.3 It takes 30 minutes to cover 20 boxes with foil.

Calculate (in seconds) the average time it will take to cover ONE box with foil. (2)
[21]

FEB 2018

QUESTION 3

3.1 A nurse from Port Allen Clinic conducts road shows to demonstrate the use of growth charts to parents. She uses a weight-for-age chart for boys as on ANNEXURE A, which shows the recorded measurements of a boy for three visits.

Use ANNEXURE A to answer the questions that follow.

3.1.1 Identify the age group represented on this chart. (2)

3.1.2 Give the boy's weight at his first visit. (2)

3.1.3 Determine the boy's age (in months) during a visit when he weighed a little less than 9 kg. (2)

3.1.4 The boy's first visit was in May.

Determine the month in which the third visit took place. (2)

3.1.5 During the fourth visit, the boy weighed 11,2 kg and his body mass index (BMI) was calculated as 19,5 kg/m^2.

Calculate the boy's corresponding height (in metres) rounded off to THREE decimal places.

You may use the following formula: $\textbf{BMI} = \dfrac{\textbf{weight (in kg)}}{\textbf{(height in m)}^2}$ (4)

3.2 The nurse uses a sedan vehicle to travel. The fuel consumption of her vehicle is 7,6 litres per 100 km travelling at an average speed.

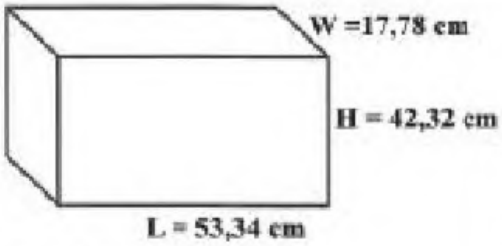
[Adapted from m.automobilio.info]

3.2.1 Calculate (to the nearest km) the distance her vehicle can travel using 55 litres of petrol. (3)

3.2.2 The nurse spends 1 hour and 45 minutes on a particular day driving between two workstations that are 189 km apart. Determine the average speed of the vehicle.

You may use the following formula: $\textbf{Average speed} = \dfrac{\textbf{distance}}{\textbf{time}}$ (3)

3.3 The dimensions (in centimetres) of a nurse's rectangular medicine box are given below.

RECTANGULAR MEDICINE BOX	DIMENSIONS OF THE MEDICINE BOX WITHOUT THE HANDLE
 [Source: Amazon.co.uk]	 **L** = length **W** = width **H** = height **NOTE:** 1 litre = 1 000 cm^3

3.3.1 Calculate the volume (to the nearest litre) of ONE medicine box excluding the handle.

You may use the following formula:

Volume = length × width × height (4)

3.3.2 The medicine box contains FOUR identical smaller boxes. EACH small box contains four different types of pills in cylindrical containers which are labelled **A**, **B**, **K** and **U**, as shown below.

[Source: Forgetting The Pill.com]

Determine (as a decimal fraction) the probability of randomly selecting a type **U** container from the medicine box. (3)

[25]

NOV 2018

QUESTION 3

3.1 Liam and Amy are planning their wedding. Amy wants a four-layer red velvet wedding cake. She must still decide between a cylindrical or rectangular cake as shown on ANNEXURE B.

Use ANNEXURE B to answer the questions that follow.

3.1.1 Determine the total height of the cylindrical cake in millimetres. (3)

3.1.2 The base (bottom) layer of the cylindrical cake has a radius of 14 cm.

(a) Determine the diameter of the base layer in cm. (2)

(b) Calculate the volume (in cm^3) of the base layer.

You may use the following formula:

Volume of a cylinder $= \pi \times$ **(radius)**^{2} $\times$ **height**, and using $\pi = 3{,}142$ (3)

3.1.3 Define the term *perimeter*. (2)

3.1.4 Calculate the area (in cm^2) of the base of the pan needed to bake the top layer of the rectangular cake.

You may use the following formula:

Area = length × width (2)

3.2 Aunt Abby will bake the wedding cake. She will be using a recipe from a recipe book published in England.

NOTE:
- 1 kg = 2,25 pounds
- 1 mℓ flour = 0,7 g flour

3.2.1 Aunt Abby needs 3 and a half pounds of butter.

Determine the mass of butter, in kilogram. (2)

3.2.2 Aunt Abby only has a kitchen scale available.

If aunt Abby needs 625 mℓ of flour, determine the mass of the flour in grams. (2)

3.2.3 The cake must be baked at 356 °F.

Determine to what degree Celsius the oven should be turned.

You may use the following formula:

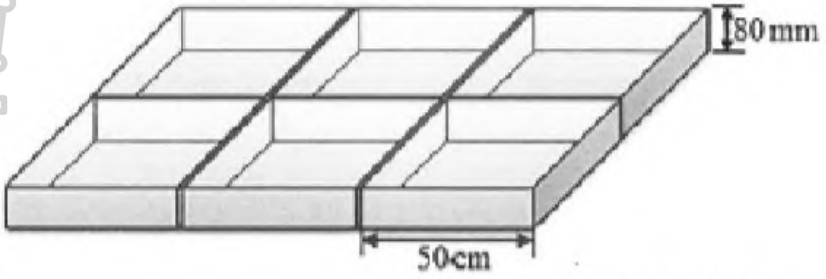
°C = (°F – 32°) ÷ 1,8 (2)

[18]

NOV 2019

QUESTION 3

3.1 African Concrete Blocks is a company that manufactures square concrete blocks. The diagram below shows the six steel moulds that they use to make the square concrete blocks.



[Adapted from www.researchgate.net]

Use the diagram above to answer the questions that follow.

3.1.1 Explain the meaning of *volume*. (2)

3.1.2 Calculate (in m^3) the volume of ONE concrete block.

You may use the following formula:

Volume = side × side × height (3)

3.2 Thabiso wants to renovate the walkway in his garden. He wants to replace the grass on the walkway with concrete blocks and pebbles.

The dimensions of the walkway, as shown in ANNEXURE B, will be 4,05 m by 1,45 m.

Use ANNEXURE B to answer the questions that follow.

3.2.1 Calculate (in m^2) the total area of the 12 concrete blocks.

You may use the following formula:

Area = side × side (3)

3.2.2 Calculate the area of the walkway that needs to be covered with pebbles.

You may use the following formula:

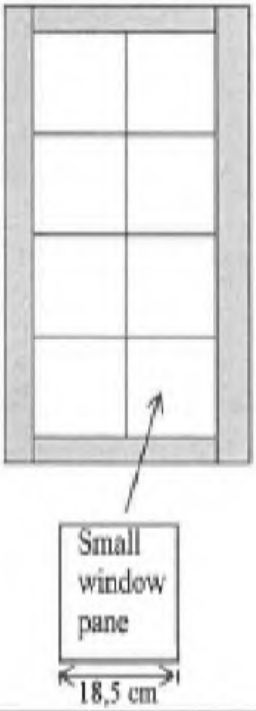
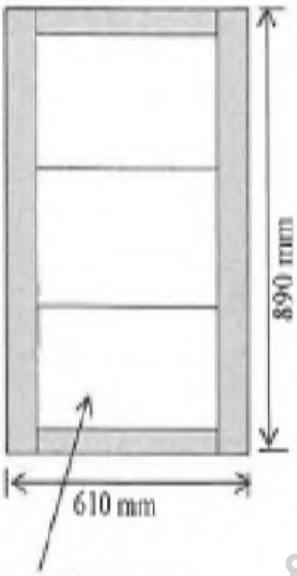
Area = length × breath (4)

3.2.3 Calculate the total number of bags of pebbles needed to cover an area of 5,7 m^2. (3)

3.3 As part of the renovations, Thabiso will also be changing the look of two different windows near the walkway. The glass panes of the window frame will be decorated with glass beads glued onto the glass pane as indicated in the picture below.

PICTURE AND DIAGRAM OF THE SMALL AND LARGE WINDOW PANES IN WINDOW FRAMES

PICTURE


SMALL SQUARE WINDOW PANES IN A FRAME	LARGER RECTANGULAR WINDOW PANES IN A FRAME
	

[Adapted from www.pinterest.com]

Use the information and diagrams above to answer the questions that follow.

3.3.1 Determine (in cm) the length of the frame of the large window. (2)

3.3.2 Calculate the perimeter of one small window pane. (2)

3.3.3 The radius of one glass bead is 1,85 cm.
Determine how many glass beads will fit along the length of one small window pane. (3)

3.3.4 The total width of 2 small window panes equals $\frac{3}{4}$ the width of one large window pane.
Calculate the width of a large window pane. (4)
[26]

MAPS, PLANS AND OTHERE REPRESENTATIONS OF THE PHYSICAL WORLD

NOV 2017

QUESTION 4

4.1 ANNEXURE B shows a route map and information regarding the 42,2 km 2017 Cape Town Marathon.

Use ANNEXURE B to answer the questions that follow.

4.1.1 Name the type of scale used for the route map. (2)

4.1.2 What type of view is represented on this route map? (2)

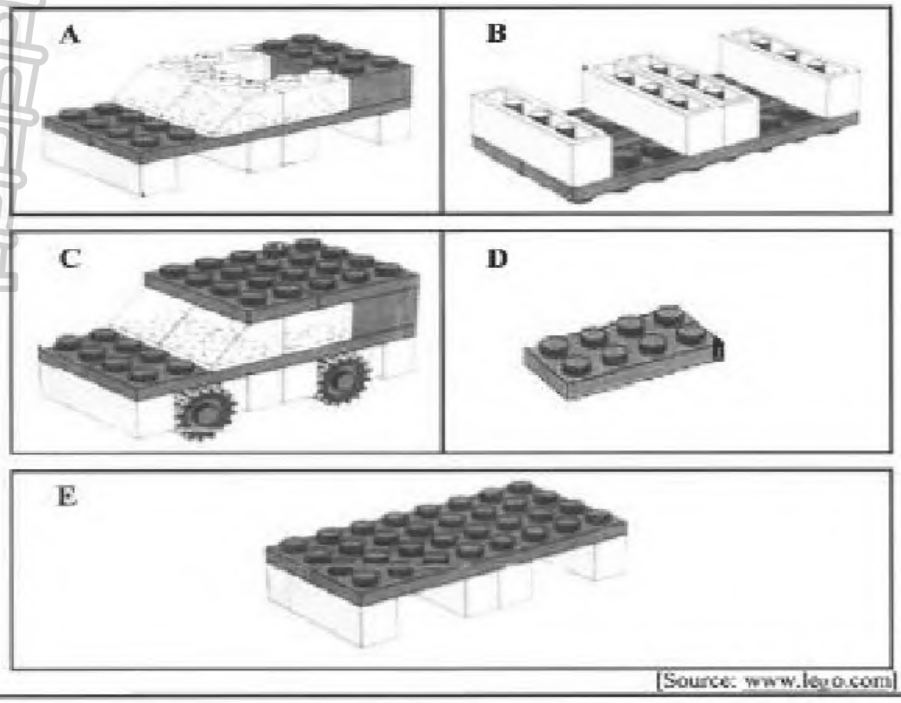
4.1.3 Name the general direction of the Groote Schuur Hospital (Tourist Attraction 10) from the starting point of the marathon. (2)

4.1.4 Determine the exact number of medical help points located on the route. (2)

4.1.5 Identify the suburbs in the vicinity of the halfway mark. (2)

4.1.6 Identify the tourist attractions indicated on the map between the 15 km mark and the 20 km mark. (3)

4.2 The diagrams below show a set of labelled assembly instructions (not in order of assembly) to build a toy car with Lego blocks.



[Source: www.lego.com]

Study the diagrams above to answer the questions that follow.

4.2.1 Write down the correct order of the assembly instructions to build the toy car, using the letters **A, B, C, D** and **E**. (2)

4.2.2 Which letter (**A, B, C, D** or **E**) fits the instruction, 'Flip over the part-assembly'? (2)

4.2.3 A can of Lego blocks contains 20 red blocks, 25 blue blocks, 28 green blocks, 30 black blocks and 27 white blocks.

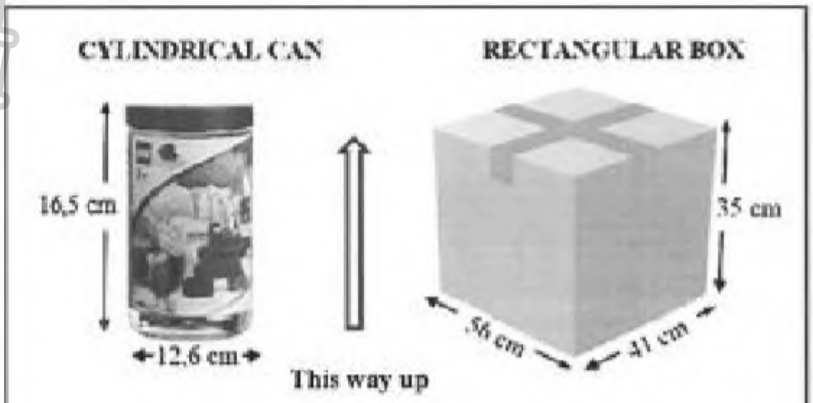
A block is randomly selected from the can.

Determine the probability that the block will be the following:

(a) Yellow (2)

(b) Blue (3)

4.2.4 The building blocks are packed into small cylindrical cans that are then packed into a large rectangular box, as shown in the diagrams below.



Dimensions of small cylindrical can:	Dimensions of large rectangular box:
Diameter = 12,6 cm	Length = 56 cm
Height = 16,5 cm	Width = 41 cm
	Height = 35 cm

The cylindrical cans are placed upright in the box.

(a) Determine the number of layers of cans that can be placed in an upright position in the box. (2)

(b) Hence, determine the maximum number of cans that can be packed into ONE box. (3)
[27]

FEB 2018

QUESTION 4

4.1 Rammone plans to travel from Colesberg to Port Elizabeth using only national roads.

ANNEXURE B shows a strip chart of the route from Colesberg to Port Elizabeth.

Use ANNEXURE B to answer the questions that follow.

4.1.1 Name the national roads that Rammone will use to travel to Port Elizabeth. (2)

4.1.2 Which national park is furthest from the N10? (2)

4.1.3 Rammone met a friend in Paterson who had to travel 61 km via the R336 from his hometown.

Name the friend's hometown. (2)

4.1.4 Calculate the travel distance between the TWO national parks. (3)

4.2.1 Give (in mm) the external length of the wall that makes the area of Bedroom 1 larger than Bedroom 2. (2)

4.2.2 Determine (in m) the total external length of the western wall of the house. (2)

4.2.3 Name the room(s) that has more than ONE entrance. (2)

4.2.4 Identify the room that has the same floor area as the living room. (2)

4.2.5 Which bathroom fixture is NOT shown on the floor plan? (2)

[19]

NOV 2018
QUESTION 4

4.1 A parkrun is a weekly 5 km run. A group of runners drove from Upington to Springbok to take part in the weekly parkrun in Springbok.

ANNEXURE C shows a route map from Upington to Springbok.

Use ANNEXURE C to answer the questions that follow.

4.1.1 Give the general direction from Upington to Springbok. (2)

4.1.2 Write down the name of the national park close to Kamieskroon. (2)

4.1.3 Name TWO towns the runners will pass through on their way to Springbok, following the N14. (3)

4.1.4 Identify the type of scale used on the map. (2)

4.1.5 Use the given scale to determine the actual distance (to the nearest km) between Upington and Springbok. (4)

4.2 On arrival in Springbok the runners must first pick up Joe, a fellow runner, before heading to the parkrun (**B**).

ANNEXURE C shows a street map indicating the route from entering Springbok (**A**) to the parkrun (**B**).

Use ANNEXURE C to answer the questions that follow.

4.2.1 Name the road by which they will enter Springbok. (2)

4.2.2 Joe gives them the following directions to his home:

- Enter Springbok from Upington.
- Turn right into Uitspan Street.
- Turn left into Lukhof Street.
- Turn left into the first street.

Use the directions above to determine in which street Joe lives. (2)

4.2.3 Name of the lodge near the parkrun. (2)

4.2.4 The distance from Joe's house to the parkrun is 2,34 km. They travel at an average speed of 40 km/h.

Determine how long it will take them (in minutes) to get from Joe's house to the parkrun.

You may use the following formula:

$$\textbf{Time} = \frac{\textbf{distance}}{\textbf{speed}}$$

(3)

4.2.5 29 of the 42 athletes who participated in the parkrun were female.

Determine the probability of randomly selecting a male athlete from this group.

(2)
[24]

NOV 2019

QUESTION 4

4.1 ANNEXURE C shows a map of the Mountain Zebra National Park.

Use ANNEXURE C to answer the questions that follow.

4.1.1 Name ALL the activities offered in the circle, **Z**. (4)

4.1.2 Identify the 4 x 4 route situated north-east of the Juries Dam. (2)

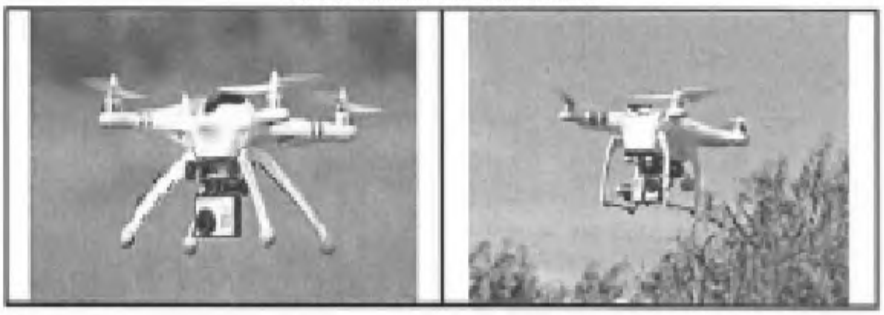
4.1.3 Determine the number of restaurants found on the map. (2)

4.1.4 Identify the type of scale shown on the map. (2)

4.1.5 The measured map distance between point **A** and point **B** is 10 cm. Use the given scale to calculate the actual distance (to the nearest km) between point **A** and point **B**. (4)

4.1.6 Field guides sometimes use drones (remote controlled aircrafts) to monitor the movement of animals in parks.

PICTURES OF DRONES



The drone travels at an average speed of 30 km/h. For a particular task, the drone flew a distance of 10 km from the guide and thereafter returned to the guide.

Calculate the total time (in minutes) for this particular task.

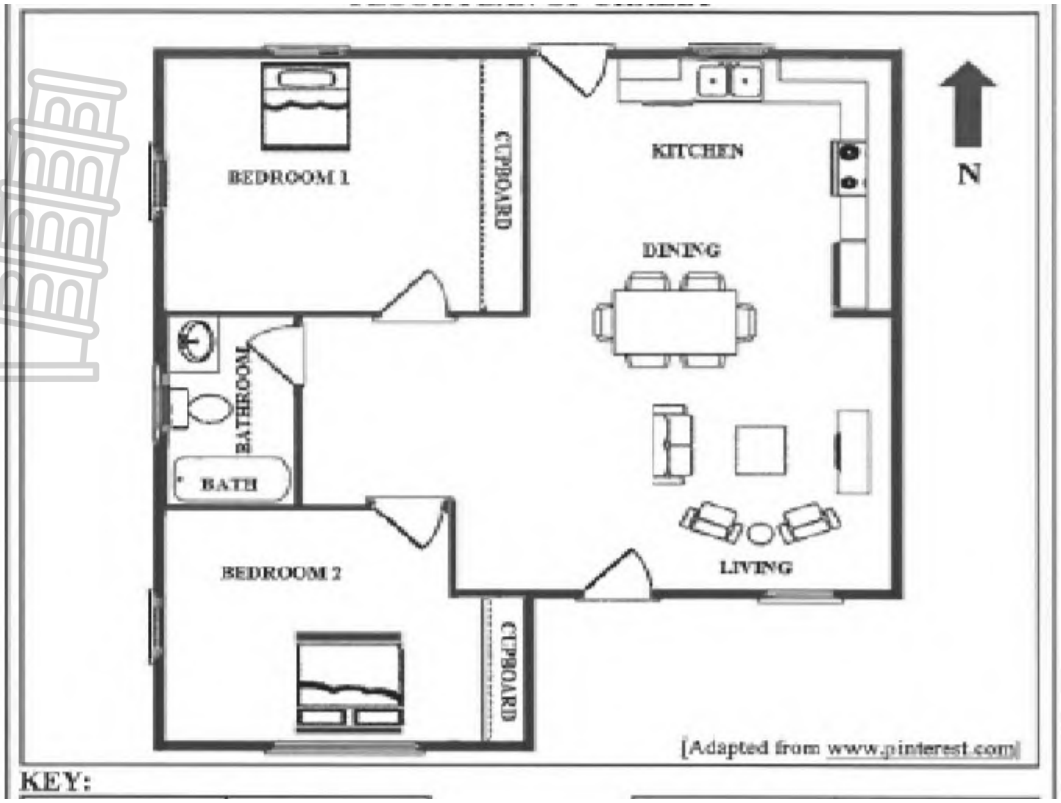
You may use the following formula:

$$\text{Time} = \frac{\text{distance}}{\text{speed}}$$

(4)

4.2 The floor plan of a chalet close to the Mountain Zebra National Park is shown below.

FLOOR PLAN OF CHALET



KEY:

ITEM	SYMBOL
Window	
Door	

ITEM	SYMBOL
Cupboard door	

Use the floor plan above to answer the questions that follow.

4.2.1 State the number of doors on the floor plan with right-hand side openings. (2)

4.2.2 Write down the name(s) of the rooms that will face the afternoon sun. (2)

4.2.3 Determine the probability of walking into a bedroom in this chalet with two separate beds in one bedroom. (2)
[24]

DATA HANDLING

NOV 2017

QUESTION 5

5.1 ANNEXURE C shows data relating to the 2015/2016 admissions for full-time NSC candidates for the 11 most common subjects.

All full-time candidates have to take at least seven subjects. Mathematics or Mathematical Literacy is compulsory.

Study the information in ANNEXURE C to answer the questions that follow.

5.1.1 Name another type of graphical representation that could be used to represent this data. (2)

5.1.2 Determine the maximum number of candidates who were admitted as full-time candidates in 2016. (2)

5.1.3 Determine the probability of randomly selecting a candidate, taking Mathematics or Mathematical Literacy, who was admitted in 2015. (2)

5.1.4 List ALL the subjects that showed a decrease in the number of full-time candidates admitted from 2015 to 2016. (3)

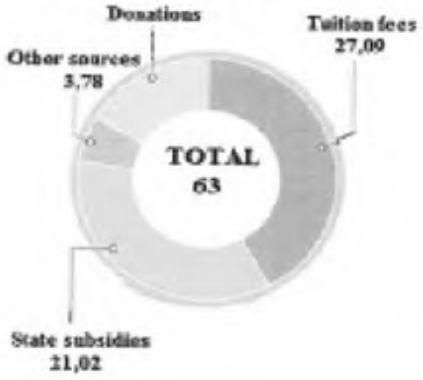
5.1.5 Name the subject that showed the greatest increase in the number of candidates admitted in 2016. (2)

5.1.6 Explain why this is called *categorical data*. (2)

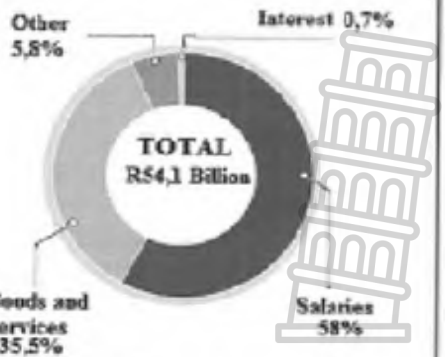
5.1.7 Identify which subject in 2016 had more than two hundred twenty three thousand, but less than two hundred seventy four thousand candidates. (2)

5.2 The two pie charts, **A** and **B**, below represent the income and expenditure of all South African tertiary institutions.

PIE CHART A
INCOME (IN BILLION RAND)



PIE CHART B
TYPES OF EXPENDITURE



[Source: www.grafika24.co.za]

5.2.1 Give ONE example of an 'Other' type of expenditure applicable to tertiary institutions. (2)

5.2.2 What percentage of income comes from donations? (3)

5.2.3 Calculate the amount (in rand) of interest paid by tertiary institutions. (3)

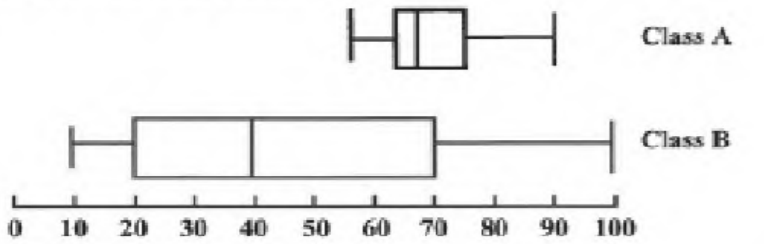
5.2.4 Determine the difference (in millions of rand) between the income and expenditure of the tertiary institutions. (3)

[26]

FEB 2018

QUESTION 5

5.1 The two box-and-whisker plots below represent the percentage marks achieved by two Grade 12 classes. Each class consists of 26 learners.



The percentage marks for **Class A**, arranged in order, are given below:

F	58	60	62	62	63	65	65	66
66	66	66	67	69	70	71	73	73
75	75	75	**H**	80	83	85	90	

[SASAMS database]

NOTE:

- **F** is the lowest percentage mark
- **H** is a percentage mark between 75 and 80

5.1.1 Which ONE of the following terms best describes the data above:

- Categorical
- Numerical
- Qualitative

(2)

5.1.2 Determine the percentage of data values that lies between the upper and lower quartiles. (2)

5.1.3 The range of Class A is 34.

Calculate the value of **F**. (3)

5.1.4	Calculate the median percentage mark for Class A.	(2)
5.1.5	Determine the inter quartile range for Class B.	(3)
5.1.6	Give the modal percentage mark for Class A.	(2)
5.1.7	Calculate the missing value **H** if the mean percentage mark for Class A is 70%.	(3)
5.1.8	Determine (as a simplified common fraction) the probability of randomly selecting a learner from Class A who obtained a percentage mark different from any other learner in the class.	(3)

5.2 A survey on the distribution of literacy levels among adults aged 35 to 64 was conducted in all provinces in South Africa.

TABLE 5 below shows the 2016 adult (aged 35 to 64) literacy levels per province.

TABLE 5: 2016 ADULT (AGED 35 TO 64) LITERACY LEVELS PER PROVINCE

PROVINCE	LITERACY LEVELS				TOTAL
	NON-LITERATE		LITERATE		
	Number	%	Number	%	
Western Cape	288 918	14,1	1 762 494	85,9	**2 051 412**
Eastern Cape	393 954	26,0	1 120 567	74,0	**1 514 521**
Northern Cape	94 552	27,9	244 282	72,1	**338 834**
Free State	192 933	24,1	609 029	75,9	**801 962**
KwaZulu-Natal	650 033	24,9	1 956 497	75,1	**2 606 530**
North West	299 994	28,3	760 068	71,7	**1 060 062**
Gauteng	575 371	12,5	4 013 463	87,5	**4 588 834**
Mpumalanga	312 273	28,5	784 347	71,5	**1 096 620**
Limpopo	372 090	28,7	922 171	71,3	**1 294 261**
TOTAL	**Q**		**12 172 918**		**15 353 036**

[Adapted from Community Survey, 2016]

NOTE: Some data has been omitted.

Use TABLE 5 above to answer the questions that follow.

5.2.1	Calculate the missing value **Q**.	(2)
5.2.2	Determine the percentage of literate adults in South Africa.	(3)
5.2.3	Express (as a unit ratio) the number of non-literate adults to the number of literate adults in KwaZulu-Natal.	(3)
5.2.4	Arrange the number of literate adults per province in ascending order.	(2)
5.2.5	Determine the province with the smallest difference between the number of literate and the number of non-literate adults.	(2)
		[32]

NOV 2018

QUESTION 5

5.1 During certain seasons in South Africa, the wind can lead to fires that cause large damages. The fire losses in South Africa for the period 2010 to 2015 are shown in TABLE 4 below.

TABLE 4: LOSSES CAUSED BY FIRE FOR THE PERIOD 2010 TO 2015

	2010	2011	2012	2013	2014	2015
Total loss in rand (in millions)	1 323	2 085,6	3 162	2 158	1 847	2 732
GNI (in thousand millions)	2 608,5	2 897,6	3 066	3 441	3 694	3 913
Fire loss as a % of GNI	0,05%	0,07%	0,103%	A	0,05%	0,07%
Number of fires (in thousands)	26,5	37,7	41,4	42,3	46,1	45,7
Population (rounded) (in million)	49,9	51,7	52,2	52,9	53,5	54,3

[Adapted from: http://www.fpasa.co.za]

NOTE: GNI – gross national income

Study TABLE 4 above to answer the questions that follow.

5.1.1 Write down the total loss, in rand, caused by fire during 2011. (2)

5.1.2 Calculate the mean total loss, in rand, caused by fires for the period 2010 to 2015. (3)

5.1.3 Identify the maximum number of fires for the period 2010 to 2015. (2)

5.1.4 Calculate the value of **A**, the fire loss as a percentage of the GNI for 2013. Round your answer to TWO decimal places. (4)

5.2 TABLE 5 below shows the labour force characteristics of South Africa for the fourth quarter of 2017.

TABLE 5: LABOUR FORCE CHARACTERISTICS IN SOUTH AFRICA IN 2017 (IN THOUSANDS)

	TOTAL LABOUR FORCE	TOTAL NEA	ECONOMICALLY ACTIVE		
			TOTAL	Employed	Unemployed
Eastern Cape	**4 216**	2 071	2 145	1 391	754
Free State	**1 893**	697	1 196	806	390
Gauteng	**10 059**	3 016	7 043	4 991	2 052
KwaZulu-Natal	**6 948**	3 638	3 310	2 513	797
Limpopo	**3 704**	1 941	1 763	1 417	346
Mpumalanga	**2 878**	1 130	1 748	**X**	506
Northern Cape	**790**	349	441	321	120
North West	**2 534**	1 221	1 313	999	314
Western Cape	**4 507**	1 412	3 095	2 492	603
South Africa	**37 529**	**15 475**	**22 054**	**16 172**	**5 882**

[Adapted from: www.statssa.co.za]

NOTE: NEA – not economically active

Use TABLE 5 above to answer the questions that follow.

5.2.1 Explain the meaning of the term *unemployed* within the context of the table above. (2)

5.2.2 Determine the value of **X**, the number of people employed in Mpumalanga. (2)

5.2.3 Name ONE data collection instrument that could be used to collect the data above. (2)

5.2.4 Calculate the percentage of people in the Western Cape who are NOT economically active (NEA). (3)

5.2.5 Write down the ratio of employed people to unemployed people in South Africa in the form … : 1. (2)

5.2.6 Determine the probability (as a decimal) of randomly selecting a person in the Free State who is NOT economically active (NEA). (3)

5.2.7 The graph on the ANSWER SHEET represents the number of economically active people, as well as those who are not economically active (NEA) in South Africa. The bars for ALL economically active persons and only the bar for the people in the Eastern Cape who are NOT economically active (NEA) are drawn.

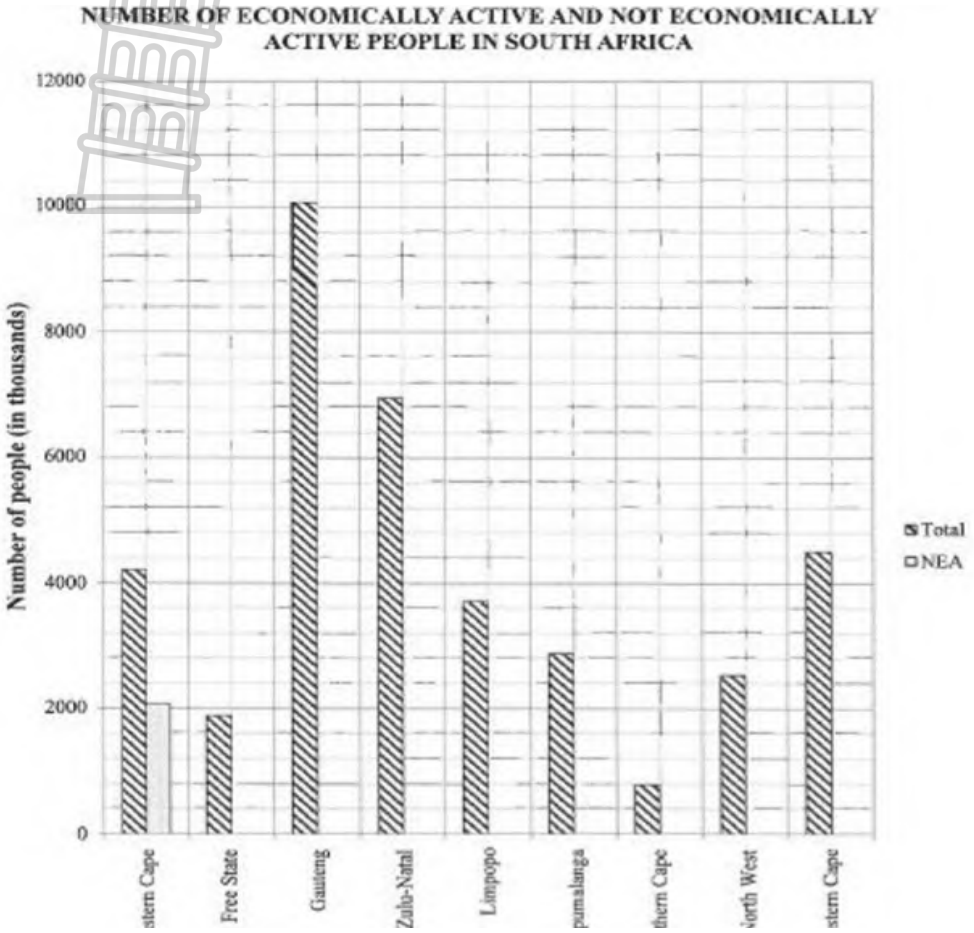
Use the ANSWER SHEET to draw the graphs for the rest of the provinces. (6)

5.2.8 Determine the probability, as a simplified fraction, of selecting a province where fewer than 350 000 people are unemployed. (4)

[35]

ANSWER SHEET

QUESTION 5.2.7

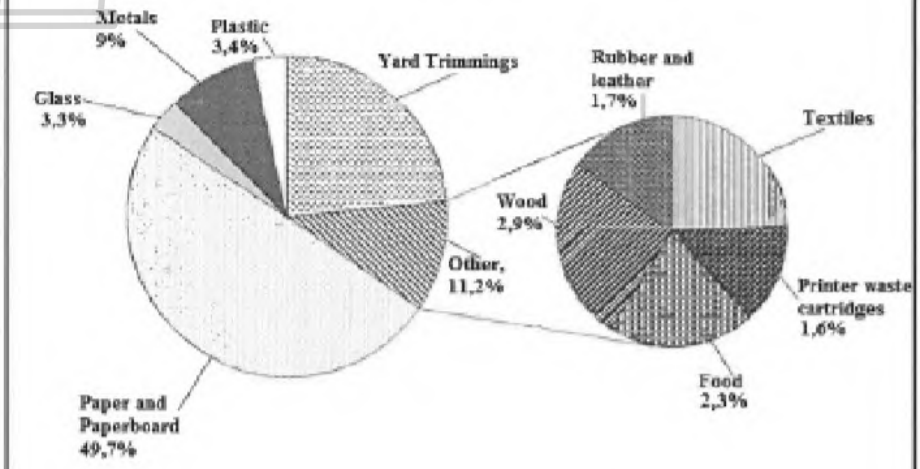


NOV 2019

QUESTION 5

5.1 The pie chart below shows the total recycling and composting of material for 2015.

TOTAL RECYCLING AND COMPOSTING BY TYPES OF MATERIAL FOR 2015 (91,16 million tons)



Glossary: Composting is the changing of waste material into fertiliser.

Study the pie charts above and answer the questions that follow.

5.1.1 Write down ONE possible data collection method that was used to gather the above data. (2)

5.1.2 Calculate the percentage allocated for yard trimmings. (3)

5.1.3 Determine the percentage allocated for textiles. (2)

5.1.4 Calculate (in tons) the total amount of plastic recycled in 2015. (3)

5.1.5 Give ONE possible example of a product that could be recycled under the metals category. (2)

5.1.6 State another type of graph that could be used to represent the data above. (2)

5.1.7 Determine, as a decimal, the probability of randomly selecting a material in the 'other' category that is NOT textiles. (4)

5.2 TABLE 5 below shows the number of seats of the 26th South African Parliament that was occupied by the different political parties. Included in the table below is the number of permanent and special delegates making up the National Council of Provinces (NCOP) since the 7 May 2014 elections.

TABLE 5: NUMBER OF SEATS IN PARLIAMENT FOR THE DIFFERENT POLITICAL PARTIES PER PROVINCE

PARTY	DELEGATE TYPE	PROVINCE									TOTAL
		EC	FS	GP	KZN	LP	MP	NW	NC	WC	
ANC	Permanent	4	4	3	4	4	4	4	4	2	33
	Special	3	3	2	3	4	4	3	3	2	27
DA	Permanent	1	1	2	1	1	1	1	1	4	13
	Special	1	1	2					1	2	7
EFF	Permanent		1	1		1	1	1	1		6
	Special							1			1
IFP	Permanent				1						1
NFP	Special				1						1
UDM	Permanent	1									1
											90

[Source: www.wikipedia.org]

African National Congress	ANC	Inkatha Freedom Party	IFP
Democratic Alliance	DA	National Freedom Party	NFP
Economic Freedom Fighters	EFF	United Democratic Movement	UDM

Use TABLE 5 to answer the questions that follow.

5.2.1 State the number of KZN delegates in the NCOP. (2)

5.2.2 Write down (in simplified form) the ratio of the total number of permanent seats to special seats for the ANC in the NCOP. (3)

5.2.3 Identify ONE party that has NO permanent seat in the NCOP. (2)

5.2.4 An incomplete bar graph showing the different types of delegates representing each party in the NCOP, is drawn on the ANSWER SHEET.

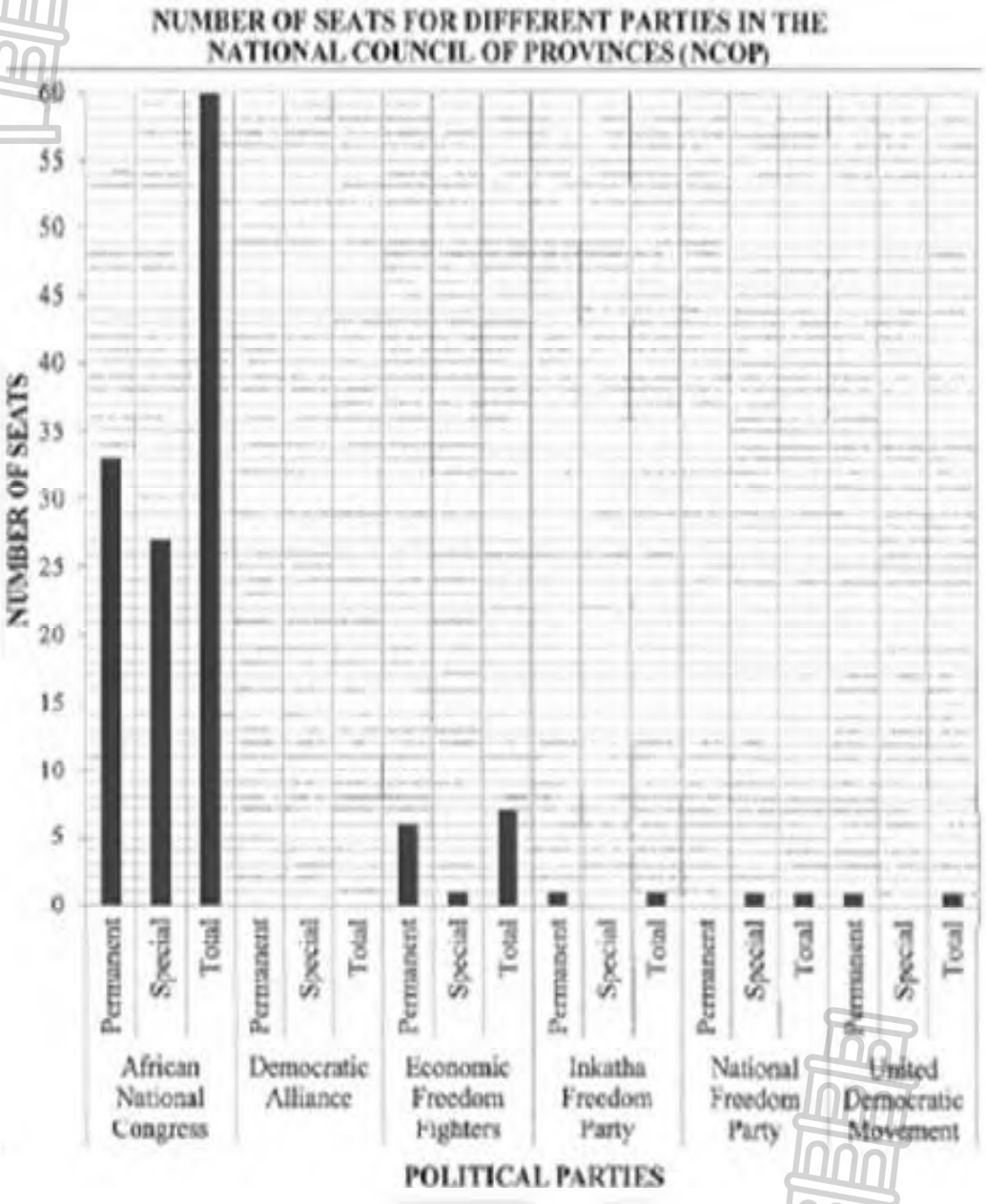
On the same ANSWER SHEET complete the bar graph for the Democratic Alliance (DA). (3)

[28]

NOTE

ANSWER SHEET

QUESTION 5.2.4



NOV 2017

ANNEXURE A

QUESTION 2.2

MUNICIPAL ACCOUNT STATEMENT

Fortune 31 33 Wood Street Smelderadio Estate 1811	**Date**	2017/01/02
	Statement for	January 2017

Account Number 547 892 30495 8233

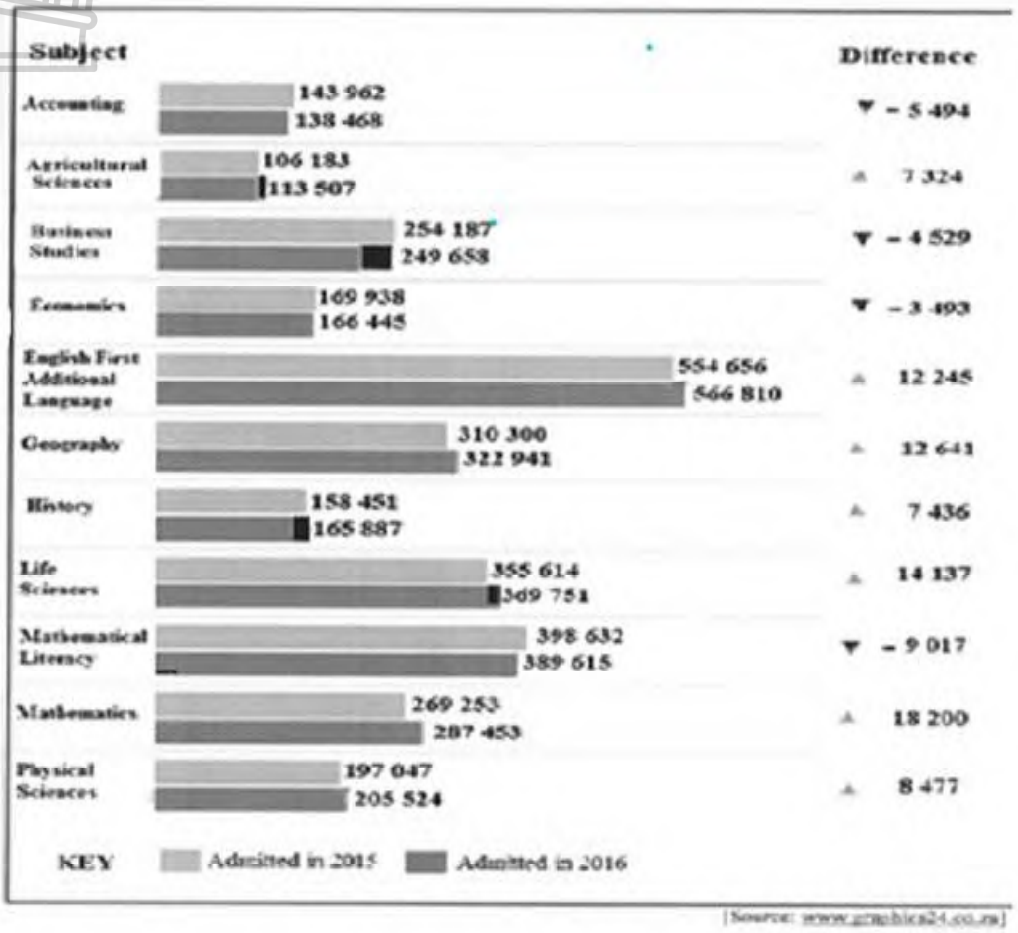
Stand Size	Number of Dwellings	Valuation Date	Portion	Municipal Valuation	Region
463 m²	1	2013/07/01	C	Market value R690 000	Q

Water and Sewerage		
	AMOUNT	**SUBTOTAL**
Reading Period (23 days): 2016/11/27 to ...		
Meter readings and consumption: Start reading 467,00 and end reading 479,00 Consumption = 12,00 kℓ Daily average consumption 0,522 kℓ		
Charges for 12,00 kℓ are based on a sliding scale. Step 1 4,534 kℓ @ R0,000 Step 2 3,022 kℓ @ R7,140 Step 3 3,778 kℓ @ R12,070 Step 4 0,666 kℓ @ R17,650 Monthly sewerage charge based on stand size 463 m² (Billing period 2016/12) VAT: 14,00%	 0,00 21,58 45,60 11,76 298,36 52,82	 430,12
Property Rates		
Category of Property: Property Rates Residential Property rates are based on the market value of the property and are calculated as follows: R690 000,00 × R0,006 916 0 ÷ 12 Less rates on first R200 000,00 of market value VAT: 0%	 A −115,27 0,00	 B
Refuse Refuse Removal VAT: 14%	 147,00 20,58	 167,58
Current Charges (Incl. VAT)		880,10

Previous Account Outstanding Balance		919,33
Current Charges		880,10
	Total Due	1 799,43
	Due Date	2017/01/25

[Adapted from City of Johannesburg Municipal Account]

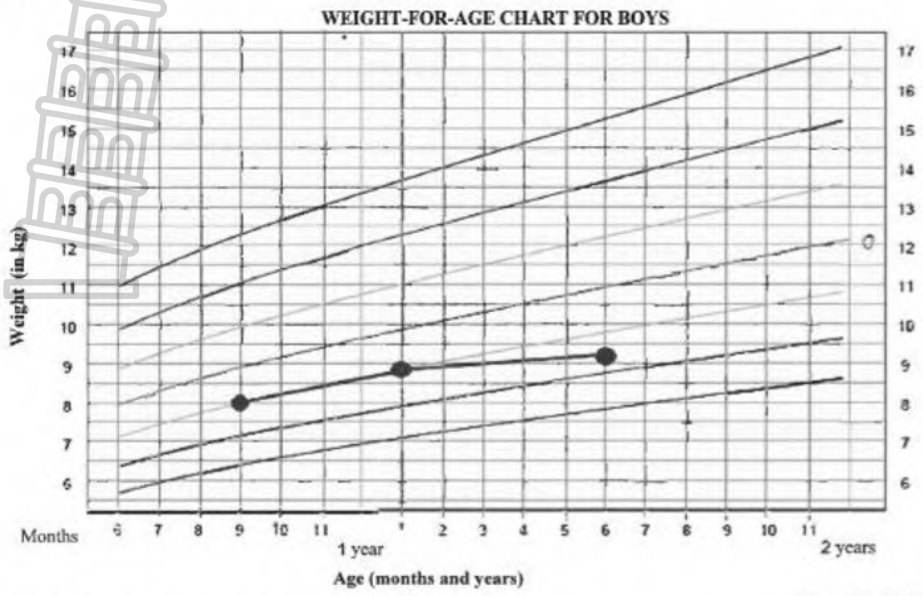
ANNEXURE C
QUESTION 5



ANNEXURE A

QUESTION 3.1

FEB 2018



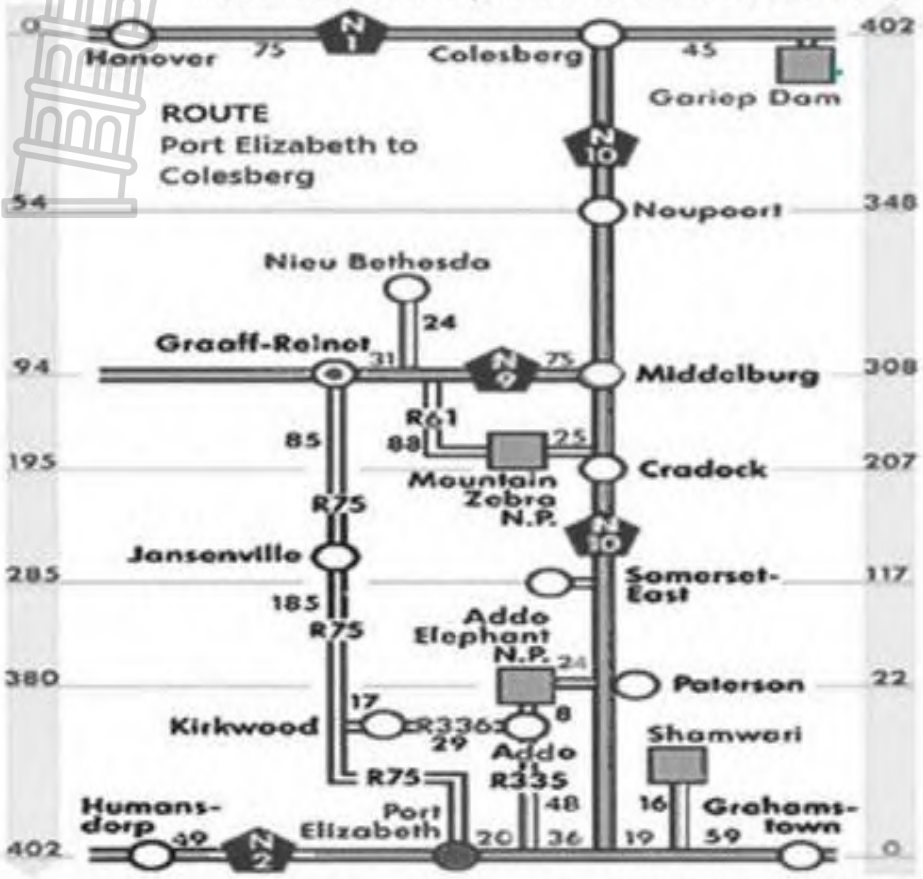
[Source: World Health Organisation (WHO)]

NOTE: The dots on the solid black line shows the three visits.

ANNEXURE B

QUESTION 4.1

STRIP CHART OF THE ROUTE FROM COLESBURG TO PORT ELIZABETH (DISTANCES IN KILOMETRES)



[Source: www.google.com]

KEY

N1	National road	N.P.	National Park
R75	Regional road		

ANNEXURE C

QUESTION 4.2

FLOOR PLAN OF A HOUSE IN PORT ELIZABETH

[Source: http://www.saplans.co.za p1003]

NOTE: All measurements are in **millimetres**.

KEY:	ITEMS	DESCRIPTION
	W1 =	Window opening
	W2 =	Window opening
		Opening requiring solid door

NOV 2018

ANNEXURE A

QUESTION 2.1

STUDENT FEES STATEMENT FOR TAMRYN ABRAHAMS FOR SEPTEMBER 2017

UNIVERSITY OF CAPE TOWN

FEES OFFICE
UCT
PRIVATE BAG X3
RONDEBOSCH
7701

+27 21 650-1704
+27 21 650-4768
Email: fhd-feeenq@uct.ac.za
Web: http://www.uct.ac.za

Fees and Cashiers Office Hours/Location:
Monday - Friday 09h00 - 15h30
Thursday - 09h30 - 15h30
Level 3, Kramer Law Building, Middle Campus

STUDENT FEES STATEMENT

Page 1 of 1

Miss Tamryn Abrahams 24 Hoop Street Extension 12 Upington 8801	Statement of account as on	06/10/17
	e-mail address	John.Abrms@gmail.com
	Invoice ID	UCT STAT NO. 0003399891
	Student name	Tamryn Jessica Abrahams
	Student number	ABRTAM002
	Account number	1567858
	Anticipated funding	R0,00

Date	Details*	Debit	Credit	Balance
	Balance brought forward	14 819,50		14 819,50
31/12/16	Interest on overdue fees	148,20		14 967,70
16/01/17	No. 5 Bank Acc direct deposit Ref 950230173		-8 650,00	**6 317,70**
06/03/17	APG 2000F History & Theory of Arch	3 030,00		
06/03/17	APG 2000F History & Theory of Arch	3 030,00		
06/03/17	APG 2003S Theory Structures 3	2 280,00		
06/03/17	APG 2009F Theory Structures 4	2 280,00		
06/03/17	APG 2011S Technology 2	9 580,00		
06/03/17	APG 2038W Environ & Services II	4 530,00		
06/03/17	APG 2039W Design & Theory Studio II	29 460,00		
23/03/17	Late payment penalty	2 087,00		62 594,70
16/05/17	No. 5 Bank Acc direct deposit Ref 950241526		-23 000,00	39 594,70
31/08/17	Interest on overdue fees	395,95		
30/09/17	Interest on overdue fees	395,95		
E. & O.E	**Due to us**			**R40 386,60**

[Adapted from www.srvwinpsw006.wf.uct.ac.za]

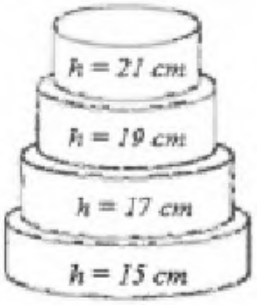
Details*: Balances/interest/course code/course name

ANNEXURE B

QUESTION 3.1

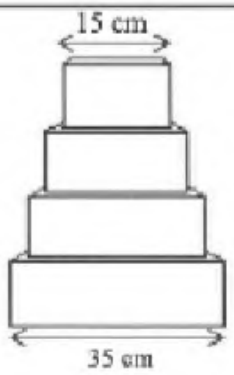
FOUR-LAYER RED VELVET WEDDING CAKES

AMY'S FOUR-LAYER CYLINDRICAL RED VELVET WEDDING CAKE



height = h

AMY'S FOUR-LAYER RECTANGULAR RED VELVET WEDDING CAKE



Length of top layer = 15 cm
Length of bottom layer = 35 cm

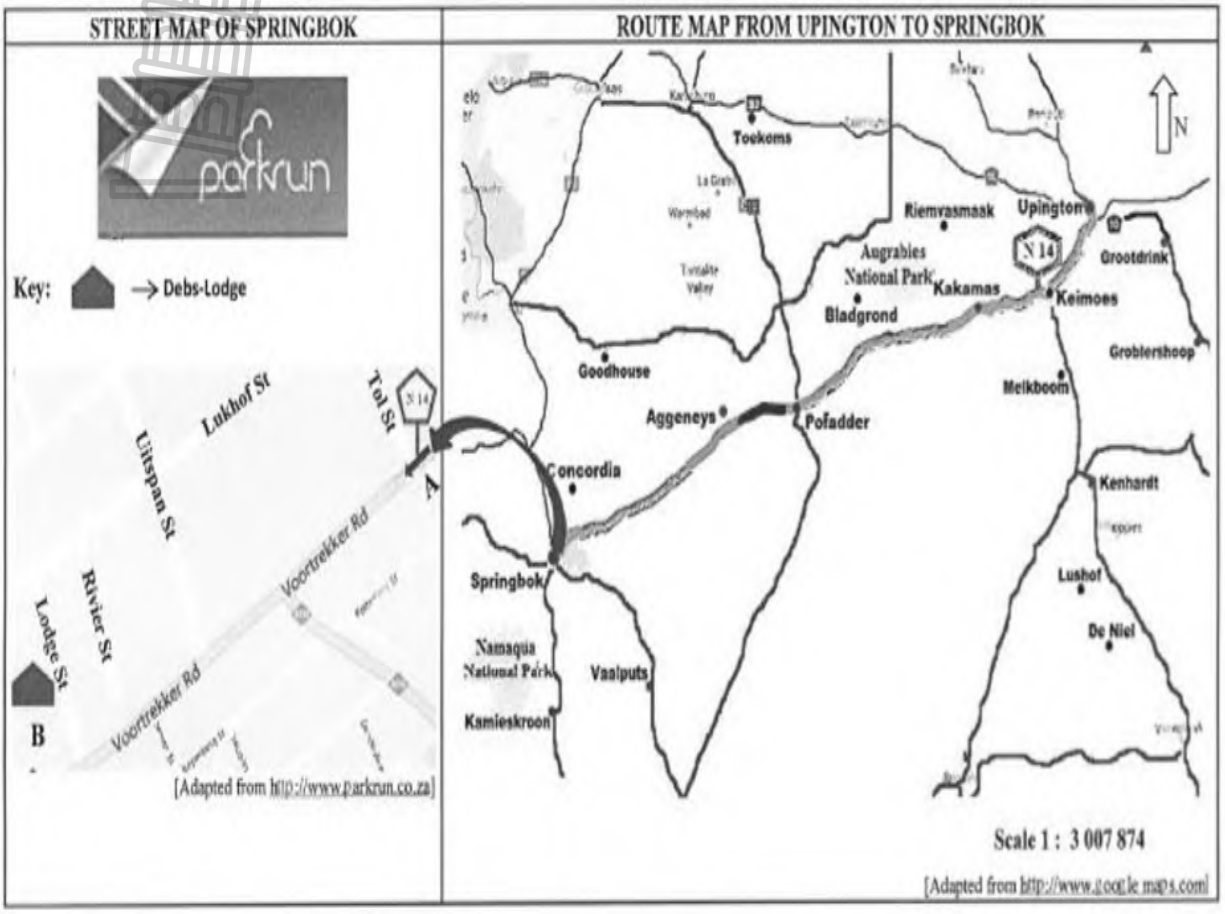
Width of top layer = 12 cm
Width of bottom layer = 33 cm

[Adapted from www.pinterest.com]

ANNEXURE C

QUESTION 4

PARKRUN SOUTH AFRICA



NOV 2019

ANNEXURE A

QUESTION 2.1

EXTRACT FROM MR DANIELS' MONTHLY MUNICIPAL STATEMENT

Mr KJ Daniels **14 Sirkoon Street** **Kruger Park** **2738**	Date: 2019/03/12 Statement for: March 2019

STAND SIZE	NUMBER OF DWELLINGS	DATE OF VALUATION	PORTION	MUNICIPAL VALUATION	REGION
463 m²	1	2018/07/01	R1	Market value R944 630,00	WARD C

ACCOUNT NUMBER: 345 678 8900 60			
		SUBTOTAL (R)	**TOTAL AMOUNT (R)**
Water and sewer			
Reading period	2019/01/16 to 2019/02/12		
Meter reading	Start: 795 000 End: 807 000		
Water usage	12 kℓ (kilolitres)		
Daily average consumption	0,429 kℓ		
Charges for 12 kℓ are based on a sliding scale for a 28-day period			
Total water charge (excluding VAT)		B	
Water demand management levy		22,64	
Monthly sewer charge based on stand size (excluding VAT)		A	
VAT: 15%		73,75	

PAYMENT DUE		**XXX**
DUE DATE		**2019/03/27**

STEPPED RESIDENTIAL WATER TARIFF	
KILOLITRES PER CONNECTION PER MONTH	**2018/19 TARIFF (R/kℓ) EXCLUDING 15% VAT**
from 0 to 6	8,28
above 6 to 10	8,79
above 10 to 15	15,00
above 15 to 20	21,83

SEWER MONTHLY CHARGE BASED ON STAND SIZE	
STAND SIZE (m²)	**2018/19 TOTAL CHARGE (IN RAND) EXCLUDING 15% VAT**
Up to and including 300 m²	194,67
Larger than 300 m² to 1 000 m²	378,95
Larger than 1 000 m² to 2 000 m²	573,29
Larger than 2 000 m²	836,02

[Adapted from www.joburgwater.co.za and www.jotariffs.co.za]

ANNEXURE B

QUESTION 3.2

THABISO'S LAYOUT PLAN FOR HIS WALKWAY

Thabiso's walkway	Bag of pebbles

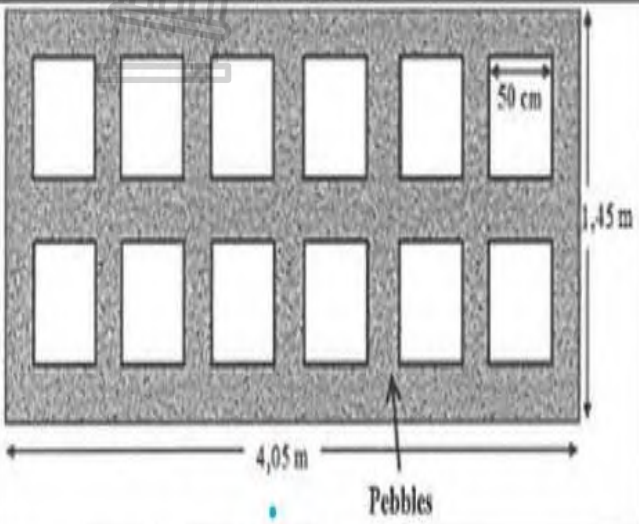



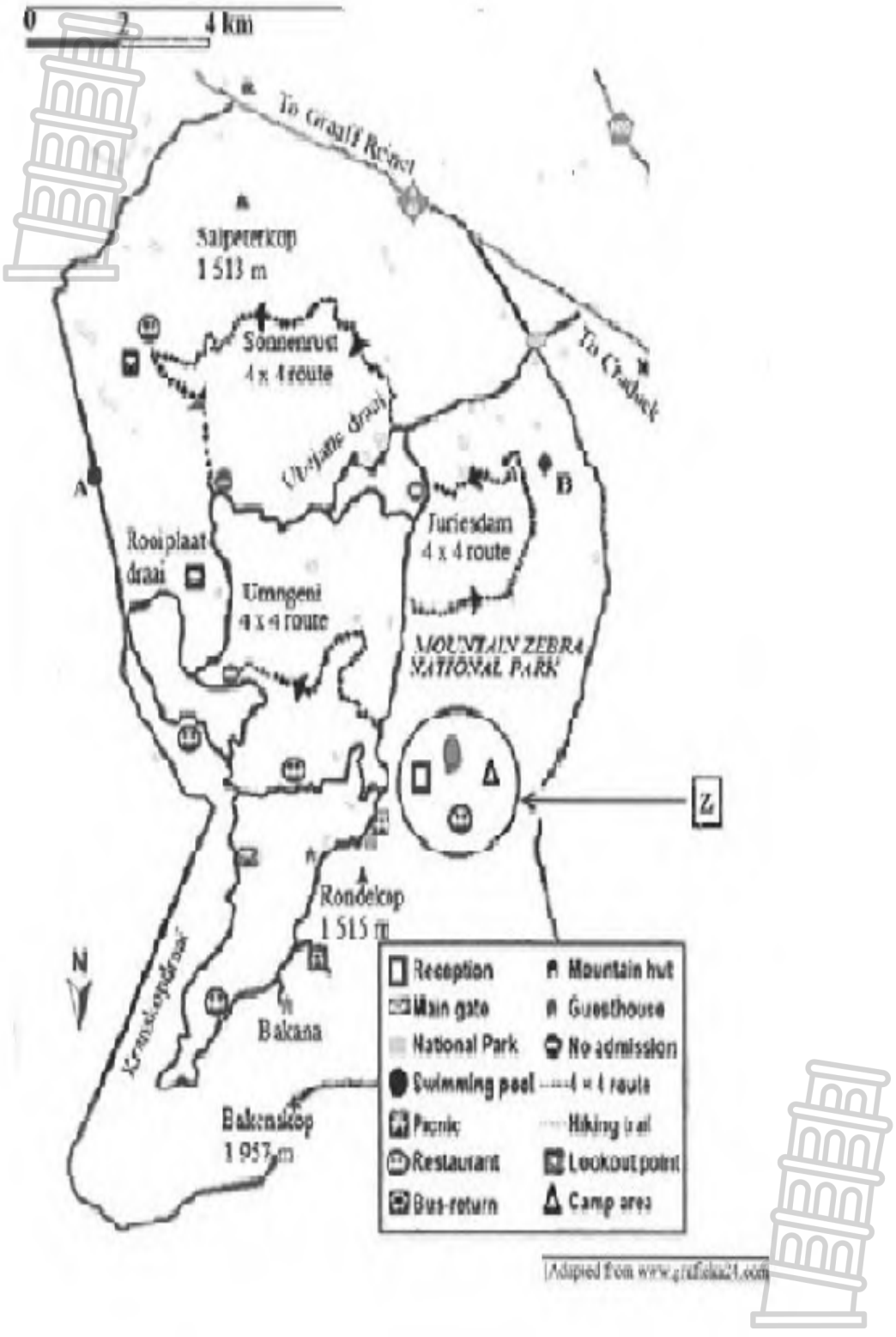
Photo of a typical arrangement	**Dimensions and information**
	• The dimensions are 4,05 metres by 1,45 metres. • 1 concrete block = 50 cm x 50 cm. • The pebbles are sold in 20 kg bags that covers an area of approximately 0,36 m^2. • He will need 12 blocks, as shown in the sketch above.

[Source: www.home-dzine.co.za]

ANNEXURE C

QUESTION 4

MAP OF THE MOUNTAIN ZEBRA NATIONAL PARK



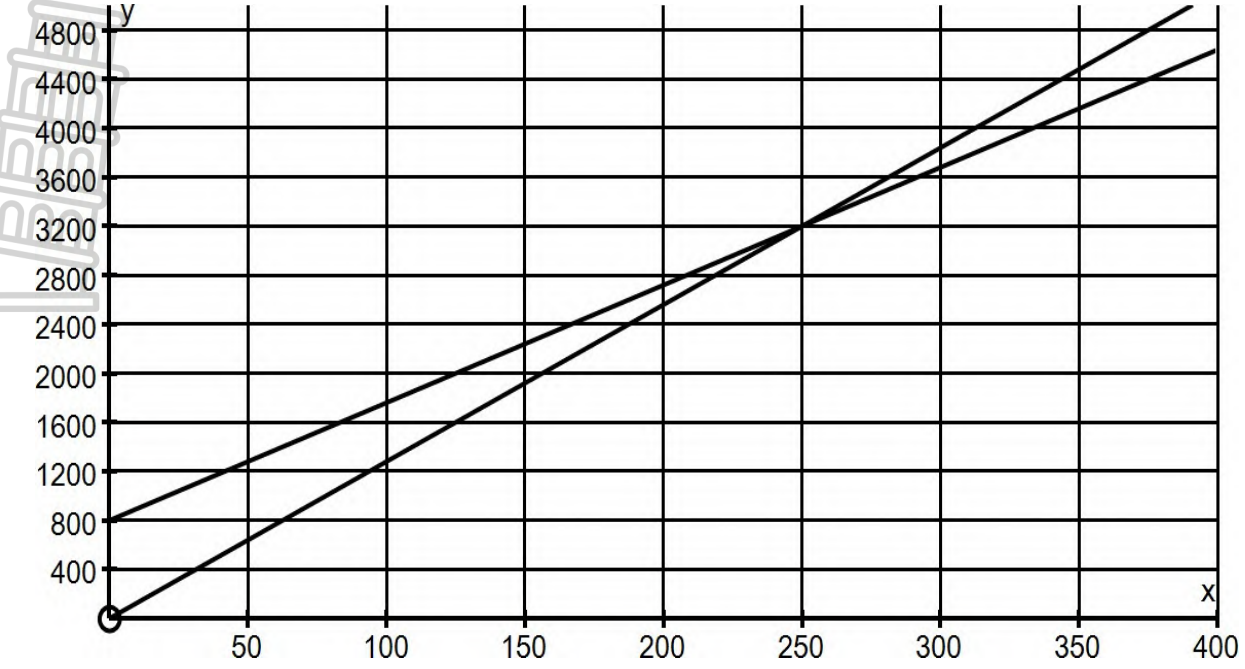
- **MASTER THE BASICS FIRST**
- **HARDWORK NEVER KILLS A PERSON**
- **PARCTICE MAKES PERFECT!!!!**
- **I BELIEVE YOU CAN….**

TICK TALK…….TICK TALK……EXAMINATIONS ARE KNOCKING!!!

MARKING GUIDELINES/ MEMORANDUM

QUESTION 1		
Ques	**Solution**	**Explanation**
1.1.		
1.1.1	Polokwane Multifranchise ✓✓**RT**	2RT reading from the table (2)
1.1.2	A = R4 106.95 – R2 636.95 ✓**MA** = R1 470.00 ✓**CA**	1MA subtraction of correct values 1CA Answer (2)
1.1.3	Discount of the battery = $\frac{1\,234.96}{2\,469.92}$ ✓**SF** × 100% ✓**MA** = 50%	1SF Substituting correct values 1MA Multiplying by 100% (2)
1.1.4	VAT = 15% × R4 106,95 ✓**MA** = R616,04 ✓**CA** **OR** VAT = R4 722,99 – R4 106,95 ✓**MA** = R616,04 ✓**CA**	1MA Multiplying by 15% 1CA Answer **OR** 1MA Subtracting correct values 1CA Answer (2)
1.1.5	Difference = R1 234,96 – R9,06 ✓**MA** = R1 225,90 ✓**CA**	1MA Subtracting correct values 1CA Answer (2)
1.2.		
1.2.1.	14 May 2019 ✓✓ **RT**	2RT Reading from the table (2)
1.2.2.	Because it is a holiday. ✓✓ **RT**	2RT Reading from the table (2)
1.2.3.	17 May 2019 ✓✓ **RT**	2RT Reading from the table (2)
1.2.4	08:30 – 10:15 ✓ **MA** = 1 hour and 45 minutes ✓**CA**	1MA Correct subtraction 1C Correct answer (2)
1.2.5	6 hours and 30 minutes. ✓✓ **RT**	1RT reading from the table (2)

QUESTION 2		
Ques	**Solution**	**Explanation**
2.1		
2.1.1	Total cost per week (A) = fixed weekly cost + (no of loaves of bread × cost per loaf) = 800 + (120 × R9,60) ✓**SF** = R1 952 ✓**CA** Total cost per week = fixed weekly cost + (no of loaves of bread × cost per loaf) R3 200 = 800 + (B × R9,60) ✓**SF** R2 400 = B × R9,60 ∴ B = 250 ✓**CA**	1SF Substituting correct values 1CA Correct Answer 1SF Substituting correct values 1CA Correct Answer (4)
2.1.2	✓**A** ✓**A** Income received = R12,80 × n, where n represent number of loaf bread	1A R12,90 1A n, number of loaf bread (2)
2.1.3	Income received = R12,80 × n, where n represent number of loaf bread Income received = R12,80 × 120 ✓**SF** = R1 536 ✓**CA** Income received = R12,80 × n, where n represent number of loaves R2 560 = R12,80 × n ✓**SF** ∴ n = 200 ✓**CA**	1SF Substituting correct values 1CA Correct Answer (2) 1SF Substituting correct values 1CA Correct Answer (4)
2.1.4	Break-even point – is a point where income is equals to the cost, there is no profit or loss made. ✓✓**O**	1O Explanation (2)

2.1.5	 1A (0;0) 1A (250;3200) 1A Joining the points	(3)
2.1.6	Coordinates of Break-even point = (250;3200) ✓✓**CA**	1CA Correct Answers (2)
2.2		

QUESTION 3		
Ques	**Solution**	**Explanation**
3.1	Annual gross salary/income = Monthly Gross Income × 12 + Annual bonus ✓**MA** ✓**MA** $= R65\,000 \times 12 + R65\,000 \times \frac{75}{100}$ = R828 750 ✓**CA**	2MA Multiplying correct values 1CA Correct answer (3)
3.2	Annual Pension Fund = $R65\,000 \times \frac{7,5}{100} \times 12$ ✓**MA** = R58 500 ✓**CA**	1MA Multiplying correct values 1CA Correct answer (2)
3.3	Annual Taxable Income = R828 750 – R58 500 ✓**MA** = R770 250 ✓**CA**	1MA Subtracting correct values 1CA Correct Answer (2)

3.4	Annual Medical Tax Credits = 12 × (R235 × 2 + R175 × 2) = R9 840 ✓**MA** Total Rebates = R15 714 + R8 613 + R9 840 ✓**MA** = R34 167 ✓**CA** Actual tax = Income tax calculated on taxable income – Rebates. ✓**RT** = 163 335 + 39% (770 250 – 613 600) – R34 167 ✓**SF** = 224 428,50 – R34 167 = 190 261,50 ✓**CA**	1MA Multiplying correct values 1MA Adding correct values 1CA Correct answer 1RT Reading from the table 1SF Correct Substitution 1CA Correct answer (6)
3.5	Net annual salary = Annual taxable income – Actual tax. = R770 250 – R190 261,50 ✓**SF** = R579 988,50 ✓**CA**	1SF Correct Substitution 1CA Correct answer (2)
3.7	Actual tax = Income tax calculated on taxable income – Rebates. ✓**RT** = 163 335 + 39% (770 250 – 613 600) – R15 714 ✓**SF** = R224 428,50 – R15 714 = 208 714,50 ✓**CA** The statement is valid. ✓**O**	1RT Reading from the table 1SF Correct Substitution 1CA Correct answer 1O Opinion (4)

QUESTION 4

Ques	Solution	Explanation
4.1		
4.1.1	No of car owners in NW = $\frac{90}{100}$ × 3 509 953 ✓**MA** = 3 158 957,7 ✓**CA** = 3 158 958 ✓**R**	1MA Multiplying correct values 1CA Correct Answer 1R Rounding (3)
4.1.2	Gauteng ✓✓**RT**	2RT Reading from the table (2)

4.1.3	1 145 861+ 2 742 590 + 3 509 953 + 4 039 939 + 5 404 868 + 5 822 734 + 6 562 053 + 10 267 300 + 12 272 263 = 51 767 561 Mean = $\frac{51\ 767\ 561}{9}$ ✓**MA**✓**MA** = 5 751 951 ✓**CA**	1MA Adding correct values 1MA dividing by 9 1CA Answer (3)
4.1.4	Eastern Cape and KwaZulu-Natal ✓✓**RT**	2RT Reading from the table (2)
4.1.5	P(picking a car owner with not more than 90% of the population) = $\frac{3}{9}$ ✓**A**✓**A** = $\frac{1}{3}$ ✓**A**	1A Denominator 1A Numerator 1A Correct Answer (3)
4.1.6	Range = Highest – Lowest = 11 162 759 – 916 689 ✓**MA** = 10 246 070 ✓**CA** Ten million one hundred and sixty two thousand and seventy people. ✓✓**E**	1MA Multiplying correct values 1CA Correct Answer 2O Opinion (4)
4.2		
4.2.1	$\text{BMI} = \frac{\text{weight (kg)}}{\text{Height (m)}^2} = \frac{65\text{ kg}}{(1.5)^2}$ ✓**SF** $= \frac{65\text{ kg}}{2.25}$ = 28.9 ✓**CA**	1SF Correct Substitution 1CA Correct answer (2)

4.2.2	BMI = $\frac{\text{Weight(kg}}{\text{Height (m)}^2}$ $27 = \frac{69\text{ kg}}{\text{Height (m)}^2}$ ✓ $\text{Height (m)}^2 = \frac{69\text{ kg}}{27}$ $\text{Height (m)}^2 = 2.56$ ✓ $H = \sqrt{2.56}$ ✓**MA** ∴ h = 1.6 ✓**CA**	1SF Correct Substitution 1SF Subject of the formula 1MA √2.56 1CA Correct answer (4)
4.3		
4.3.1	BMI Range = 26 – 18 ✓**MA** = 8 ✓**CA**	1MA Subtracting correct values 1CA Correct Answer (2)
4.3.2	27,1 – 23 ✓✓**MA** = 4,1 ✓**CA**	2MA Subtracting correct values 1CA Correct Answer (3)

NOV 2017

QUESTION FR44G1 [12 MARKS/PUNTE] ANSWER ONLY FULL MARKS

Q.V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	1 / one / een ✓✓A OR/OF A day / 'n dag ✓✓A OR/OF One day / Een dag ✓✓A	2A for correct day (2)	M L1
1.1.2	Price before saving / Prys voor besparing R70 ÷ R250 ✓M = R320 ✓A	1M adding correct values 1A simplification (2)	F L1
1.1.3	Ariel ✓✓A	2A product (2)	F L1
1.1.4	✓MA 750 m ℓ ÷ 1 000 = 0,75 ℓ ✓A OR/OF ✓MA 750 m ℓ × 0,001 = 0,75 ℓ ✓A	1MA for dividing by 1 000 1A simplification only if division OR/OF 1MA for multiplying by 0,001 1A simplification only if multiplied (2)	M L1
1.1.5	Price / Prys = R11 × 3 ✓MA = R33,00 ✓CA	1MA multiplying correct values 1CA simplification (only if R7,70 × 3) (2)	F L1

Q.V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.3.1	Two Oceans Marathon / *Twee Oseane-marathon* ✓✓RT	2RT reading from table Accept: Race on 15 April 2017 Race of 56 km Race with an entry fee of R520,00 (2)	M L1
1.3.2	Comrades Marathon / *Comrades-marathon* ✓✓RT	2RT reading from table Accept: Race on 4 June 2017 Race of 89 km Race with an entry fee of R460,00 (2)	M L1
1.3.3	R520,00 – R460,00 ✓RT = R60,00 ✓A	1RT correct values from the table 1A answer (2)	F L1
1.4.1	12 Hours / *12 Ure* ✓✓A OR/*OF* Half a day / *Halwe dag* ✓✓A	2A correct time Accept: 12:00 OR/*OF* 12 o'clock Max 1 mark (2)	M L1
1.4.2	Discrete / *Diskreet* ✓✓A	2A discrete (2)	D L1
1.4.3	✓RT 17 031 : 13 852 ✓A	1RT correct values from table 1A correct values in correct order Accept answer as unit ratios: 1 : 0,813 1,229 : 1 Accept answer in fraction form NPR (2)	D L1
			[32]

FEB 2018

Question 1 [30Marks] AO			
Ques	Solution	Explanation	Topic L
1.1.1	3½ years ✓✓A OR Three and half a years ✓✓A OR 3,5 years ✓✓A	2A numerical period OR 2A period in words 3 years 6 months (only 1 mark) (2)	M L1
1.1.2	Total Repayment Cost = R1 078,26 × 42 ✓M/A = 45 286,92 ✓CA	1MA multiply term by instalment 1CA Total cost From Q1.1.1. (2)	F L1
1.1.3	✓M Discount = R29 999,00 × 15% = R4 499,85 ✓A	1M calc. discount 1A saving (2)	F L1
1.2.1	AD : CB = 10,9 : 9,45 ✓M = 218 : 189 ✓ CA	1M ratio form 1CA simplified form Accept unit ratio (1: 0,87) OR (1,15 : 1) (2)	MP L1
1.2.2	✓M/A CD = 125,92m – (57,5 + 10,9 + 9,45) = 48,07m ✓CA	1M/A subtracting all lengths 1CA length (2)	M L1
1.2.3	Radius = $\frac{4,73}{2}$ m ✓M = 2,365 m ✓A	1M dividing by 2 1A simplification NPR (2)	M L1
1.2.4	✓M/A Total Cost = R97,58/m × 57,5m = R5 609,70 ✓CA	1M/A multiply cost by correct distance 1CA simplification (2)	F L1
1.3.1	C ✓✓A	2A city (2)	D L1
1.3.2	Range = 8°C – (– 7°C) ✓MA = 15°C ✓CA	1MA subtracting correct values 1CA temperature (2)	D L1

Ques	Solution	Explanation	Topic/L
1.3.3 (a)	B ✓✓A	2A city (2)	P L1
1.3.3 (b)	Likely OR less likely ✓✓A	2A correct words (2)	P L1
1.4.1	Bar graph ✓✓A OR Single bar graph ✓✓A OR Vertical bar graph ✓✓A OR Column graph ✓✓A	2A correct type (2)	D L1
1.4.2	✓✓A Three hundred and sixty one thousand nine hundred and forty eight.	2A number in words (2)	M L1
1.4.3	Q 5 ✓✓A	2A correct question (2)	D L1
1.4.4	Average time per mark = $\frac{180}{150}$ min ✓MA = 1,2 min ✓CA OR Average time per mark = $\frac{3 \text{ hours}}{150}$ ✓MA = 0,02 × 60 min = 1,2 min ✓CA OR 150 marks : 180 min ✓MA 1mark : 1,2 min ✓CA	1MA numerator and denominator 1CA simplification OR 1MA numerator and denominator 1CA simplification OR 1MA correct ratio 1CA simplification (2)	D L1
			[30]

NOV 2018

QUESTION/*VRAAG* 1 [32 MARKS/*PUNTE*] ANSWER ONLY FULL MARKS			
Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.1	1 / one / *een* ✓✓A OR/*OF* A day / *'n dag* ✓✓A OR/*OF* One day / *Een dag* ✓✓A	2A for correct day (2)	M L1
1.1.2	Price before saving / *Prys voor besparing* R70 + R250 ✓M = R320 ✓A	1M adding correct values 1A simplification (2)	F L1
1.1.3	Ariel ✓✓A	2A product (2)	F L1
1.1.4	✓MA 750 m ℓ ÷ 1 000 = 0,75 ℓ ✓A OR/*OF* ✓MA 750 m ℓ × 0,001 = 0,75 ℓ ✓A	1MA for dividing by 1 000 1A simplification only if division OR/*OF* 1MA for multiplying by 0,001 1A simplification only if multiplied (2)	M L1
1.1.5	Price / *Prys* = R11 × 3 ✓MA = R33,00 ✓CA	1MA multiplying correct values 1CA simplification (only if R7,70× 3) (2)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.6	R11; R15; R18; R22; R30; R43; R44; R45; R65; R250 ✓✓A	2A arranging in correct order If names used max 1 mark (2)	D L1
1.2.1	English = 35 letters OR 15 letters ✓✓A *Afrikaans = 37 letters OF 17 letters* ✓✓A	2A correct number WC, FS, NC Provinces accept both (2)	M L1
1.2.2	44 °C ✓✓A	2A correct reading Accept 44 - 45 °C (2)	M L1
1.2.3	One unit on the drawing represents twenty five units in reality / *Een eenheid op die tekening verteenwoordig vyf en twintig eenhede in werklikheid.* ✓✓A OR/*OF* Scale in this context means that the drawing of the T-shirt is 25 times smaller than in reality / *Skaal in hierdie konteks beteken dat die tekening van die T-hemp 25 keer kleiner is as in werklikheid.* ✓✓A OR/*OF* On the picture the shirt is 25 times smaller / *Op die foto is die hemp 25 keer kleiner* ✓✓A	2A correct definition Accept no units (2)	MP L1
1.2.4	= 61 mm ✓✓A	2A correct measurement (Accept 59 mm – 64 mm) Correct answer in cm = max 1 mark (2)	M L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.3.1	Two Oceans Marathon / *Twee Oseane-marathon* ✓✓RT	2RT reading from table Accept: Race on 15 April 2017 Race of 56 km Race with an entry fee of R520,00 (2)	M L1
1.3.2	Comrades Marathon / *Comrades-marathon* ✓✓RT	2RT reading from table Accept: Race on 4 June 2017 Race of 89 km Race with an entry fee of R460,00 (2)	M L1
1.3.3	R520,00 – R460,00 ✓RT = R60,00 ✓A	1RT correct values from the table 1A answer (2)	F L1
1.4.1	12 Hours / *12 Ure* ✓✓A OR/*OF* Half a day / *Halwe dag* ✓✓A	2A correct time Accept: 12:00 OR/*OF* 12 o'clock Max 1 mark (2)	M L1
1.4.2	Discrete / *Diskreet* ✓✓A	2A discrete (2)	D L1
1.4.3	✓RT 17 031 : 13 852 ✓A	1RT correct values from table 1A correct values in correct order Accept answer as unit ratios: 1 : 0,813 1,229 : 1 Accept answer in fraction form NPR (2)	D L1
			[32]

QUESTION/VRAAG 1 [30 MARKS/PUNTE] AO			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	Numerical data/Numeriese data ✓✓A	2A correct identification (2)	D L1
1.1.2	Modal allowance/Modale toelaag = R1 780 ✓✓A	2A mode (2)	D L1
1.1.3	R1 715; R1 715; R1 695; R1 695; R1 695; R960; R405 ✓✓A	2A descending order Accept the names (2)	D L1
1.1.4	Increase in rand/Verhoging in rand ✓RT R1 780 – R1 695 = R85,00 ✓A	1RT correct 2 values 1A simplification (2)	F L1
1.1.5	Pension allowances older than 75 ✓A Staatsouderdomstoelae ouer as 75 War veteran allowances/Oorlogsveteranetoelae/Toelaes vir oorlogsveterane ✓A	1A correct allowance 1A correct allowance (2)	D L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.2.1	1 kg = 1 000 g ? = 400 g ∴ Quantity/ mass in kg = $\frac{400g}{1000}$ ✓MA = 0,4 kg ✓A OR/OF 400 g = $\frac{400}{1000}$ kg ✓MA = 0,4 kg ✓A OR/OF ✓MA 400 g = 400 × 0,001kg = 0,4 kg ✓A	1MA dividing by 1 000 1A amount in kg OR/OF 1MA dividing by 1 000 1A amount in kg OR/OF 1MA multiply by 0,001 1A amount in kg NFU (2)	M L1
1.2.2	✓RT Profit/Wins = R14,30 – R10,99 ✓M = R3,31 ✓CA	1RT correct values 1M subtracting values 1CA simplification (3)	F L1
1.2.3	Number of packets/Getal pakkies: 2,5 kg × $\frac{1000}{250}$ ✓MA ✓M = 10 packets/pakkies ✓CA OR/OF $\frac{2,5kg}{0,25kg}$ ✓C ✓M = 10 packets ✓CA OR/OF 250g : 2,5kg ✓MA 250g : 2500g ✓C 1: 10 = 10 packets ✓CA	1MA multiply by 1 000 1M dividing by 250g 1CA simplification OR/OF 1C converting into kg 1M dividing by 0,25 kg 1CA simplification OR/OF 1MA ratio concept 1C conversion to same unit 1CA simplification (3)	M L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.2.4	Selling price/Verkoopsprys $\frac{R29,20}{8}$ ✓MA =R3,65 ✓CA OR/OF $\frac{2kg}{8}$ = 0,25kg ∴ 2kg = R29,20 0,25 kg = $\frac{0,25 \times R29,20}{2}$ ✓MA = R3,65 ✓CA	1MA dividing correct value by 8 1CA simplification (only if dividing by 8 or correct value used) OR/OF 1MA dividing by 2 AND multiply by 0,25 1CA simplification (2)	F L1
1.3.1 (a)	69 OR/OF 69% ✓✓A	2A correct value (2)	D L1
1.3.1 (b)	80 OR/OF 80% ✓✓A	2A correct value (2)	D L1
1.3.2	Difference/Verskil ✓RT 84% – 64% = 20% ✓CA	1RT both correct values 1CA simplification (2)	D L1
1.4.1	16:00 OR/OF four o'clock in the afternoon/vier uur in die middag OR/OF 4 pm/nm	2A correct value (2)	D L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.4.2	Probability/Waarskynlikheid = 20% OR/OF 0,2 OR/OF $\frac{20}{100}$ OR/OF $\frac{2}{10}$ OR/OF $\frac{1}{5}$ OR/OF unlikely/onwaarskynlik OR/OF less likely/minder waarskynlik ✓✓A	2A correct value/words (2)	P L1
		[30]	

FINANCE
NOV 2017

QUESTION/*VRAAG* 2 [41 MARKS/*PUNTE*]

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.1	✓A Interest refers to the amount that will be added to an account that is not settled yet / ✓A *Rente verwys na die bedrag wat by die agterstallige bedrag gevoeg word.* **OR/*OF*** ✓A ✓A Extra amount is charged on the late payments / *Ekstra bedrag wat gehef word op laat betalings.* **OR/*OF*** ✓A ✓A Extra money to be charged on overdue fees / *Ekstra geld wat op agterstallige gelde gehef word.* **OR/*OF*** ✓A ✓A Money charged for not paying fees on time / *Geld gehef vir fooie nie betyds betaal nie.* **OR/*OF*** ✓A Interest in this context is the charge levied because of unpaid fees or late payment of fees /✓A *Dit is ekstra geld wat gehef word omdat die rekening nie op tyd betaal word nie.*	1A amount charged 1A reason (2)	F L1
2.1.2	R14 819,50 ✓✓RT	2RT balance (2)	F L1
2.1.3	✓RT $\frac{148{,}20}{14\,819{,}50} \times \frac{100}{1}\%$ ✓M = 1,000033739329937 ≈ 1% ✓CA	1RT correct values 1M multiply by 100 1CA answer (3)	F L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.4	✓RT APG 2039W Design & Theory Studio II ✓RT	1RT code 1RT name If APG omitted = full marks (2)	F L1
2.1.5	✓RT R14 967,70 – R8 650,00 ✓M = R6 317,70	1RT correct values 1M subtracting deposit (2)	F L1
2.1.6	Total amount / *Totale bedrag* ✓RT ✓M = R3 030 + R3 030 + R2 280 + R2 280 + R9 580 + R4 530 + R29 460 + R2 087 + R395,95 + R395,95 = R57 068,90 ✓CA **OR/*OF*** Total amount / *Totale bedrag* ✓M ✓RT = R62 594 – R6 317,70 + 2 × R395,95 = R57 068,90 ✓CA **OR/*OF*** Total amount / *Totale bedrag* ✓RT ✓M R40 386 + R23000 + R8650 – R14819,50 – R148,50 = R57 068,90 ✓CA **OR/*OF*** Total amount / *Totale bedrag* ✓RT ✓M R3 030 + R3 030 + R2 280 + R2 280 + R9 580 + R4 530 + R29 460 + R395,95 + R395,95 = R54 981,90 ✓CA **OR/*OF*** Total amount / *Totale bedrag* ✓M ✓RT = R62 594 – R6 317,70 + 2 × R395,95 – R2 087 = R54 981,90 ✓CA **OR/*OF***	AO 1RT reading all correct values 1M adding values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M adding values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification **OR/*OF***	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	Total amount / *Totale bedrag* ✓RT ✓M R40 386 + R23000 + R8650 – R14819,50 – R148,50 – R2 087 = R54 981,90 ✓CA AFRIKAANS VRAESTEL: ✓RT ✓M R148,20 + R3030 + R3030 + R2280 + R2280 + R9580 + R4530 + R29460 + R2087 + R395,95 + R395,95 = R57 217,10 ✓CA **OR/*OF*** ✓RT ✓M R40 386 + R23000 + R8650 – R14819,50 = R57 217,10 ✓CA **OR/*OF*** ✓M ✓RT R62 594,70 – R6317,70 + 2 x R395,95 + R148,20 = R57 217,10✓CA **OR/*OF*** ✓RT ✓M R148,20 + R3030 + R3030 + R2280 + R2280 + R9580 + R4530 + R29460 + R395,95 + R395,95 = R55 130,10 ✓CA **OR/*OF*** ✓RT ✓M R40 386 + R23000 + R8650 – R14819,50 – R2 087 = R55 130,10 ✓CA **OR/*OF*** ✓M ✓RT R62 594,70 – R6317,70 + 2 x R395,95 + R148,20 – R2 087 = R55 130,10 ✓CA	1RT reading all correct values 1M subtracting values 1CA simplification 1RT reading all correct values 1M adding values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M adding values 1CA simplification **OR/*OF*** 1RT reading all correct values 1M subtracting values 1CA simplification (3)	

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.7	Direct deposit / *Direkte deposito* ✓✓RT	2RT reading correctly Accept deposit only (2)	F L1
2.1.8	Monthly instalment / *Maandelikse paaiement* R40 386,60 ÷ 5 ✓A ✓M = R8 077,32 **OR/*OF*** Monthly instalment / *Maandelikse paaiement* R8 077,32 × 5 ✓A ✓M = R40 386,60 **OR/*OF*** Monthly instalment / *Maandelikse paaiement* $\frac{R40386{,}60}{R8077{,}32}$ ✓M = 5 ✓A	1A calculating 5 1M dividing by 5 **OR/*OF*** 1A calculating 5 1M multiply by 5 **OR/*OF*** 1M dividing correct values in correct order 1A calculating 5 (2)	F L1
2.2.1	✓A Inflation is a measure of rate at which the cost of goods is changing over a period of time and is usually expressed as a percentage / ✓A *Inflasie is die meting van die koers waarteen die prys van goedere verander oor 'n tydperk en word gewoonlik uitgedruk in persentasie.* **OR/*OF*** ✓A The percentage increase of the food prices over the period 1970 – 2015 /✓A *Die persentasietoename van kosprysse oor die tydperk 1970 – 2015.* **OR/*OF*** ✓A ✓A Percentage increase of price over a period of time / *Persentasie verhoging van pryse oor 'n tydperk.* **OR/*OF*** ✓A ✓A Inflation is the rising price of goods/items over time / *Inflasie is die stygende prys van goedere/dienste oor tyd.*	1A percentage increase 1A time (2)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.2	R0,30 OR/*OF* 30c ✓✓RT	2RT correct value Accept 0,30 If the candidates only wrote 30 = max 1 mark (2)	F L1
2.2.3	✓M R557,00 – R418,00 ✓RG = R139,00 ✓CA	AO 1RG correct amount 1M subtracting 1CA simplification (one of the 2 values must be correct) (3)	F L1
2.2.4	Percentage change / *Prosentasieverandering* ✓RT $\frac{R75,00 - R0,25}{R0,25} \times \frac{100}{1}\%$ ✓SF = 29 900 % ✓CA OR/*OF* Percentage change / *Prosentasieverandering* ✓RT $\frac{75}{0,25} \times 100\% = 30\,000\%$ ✓M Therefore % increase = 30 000% - 100% = 29 900% ✓CA	AO 1RT all correct values 1SF substitute correct values 1CA correct percentage OR/*OF* 1RT all correct values 1M subtracting 1CA correct percentage (3)	F L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.5	Cost price / *Kosprys* $\frac{100}{117,5} \times \frac{104,90}{1}$ ✓MA = R89,28 ✓A OR/*OF* Cost price / *Kosprys* $\frac{104,90}{117,5\%}$ ✓MA = R89,28 ✓A OR/*OF* Cost price / *Kosprys* $\frac{104,90}{1,175}$ ✓MA = R89,28 ✓A OR/*OF* Cost price / *Kosprys* $\frac{17,5}{117,5} \times R104,90 = R15,62$ R104,90 – R15,62 ✓MA =R89,28 ✓A	AO 1MA multiplying correct values 1A answer OR/*OF* 1MA dividing correct values in the correct order 1A answer OR/*OF* 1MA dividing correct values in the correct order 1A answer OR/*OF* 1MA multiplying and subtracting correct values 1A answer (2)	F L2
2.3.1	✓✓A B OR/*OF* R241 600 000 000 ✓✓A	2A correct value (2)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.3.2	Budget is the proposed way in which money will be spent on different items / *Begroting is die voorgestelde manier hoe die geld vir verskillende items gespandeer behoort te word* ✓✓A OR/*OF* A plan on how money is going to be spent on estimated income / *'n Plan oor hoe geld op beraamde inkomste bestee gaan word* ✓✓A OR/*OF* A plan in how money is going to be spent / *'n Plan hoe geld uitgegee / spandeer gaan word* ✓✓A OR/*OF* Financial plan how to spend money/finance / *Finansiële plan hoe om geld / finansiering te spandeer* ✓✓A OR/*OF* Estimated income and expenditure of money / *Geskatte inkomste en uitgawes van geld* ✓✓A	2A definition (2)	F L1
2.3.3	Skills development levy institutions / *Vaardigheidsontwikkelingheffingsinstellings* ✓✓RT	2RT correct sector (2)	F L1
2.3.4	Percentage of the total education budget / *Persentasie van die totale onderwysbegroting* ✓RG/RT $\frac{15,3}{320,5} \times 100\%$ ✓M = 4,77% ✓CA OR/*OF* Percentage of the total education budget / *Persentasie van die totale onderwysbegroting* ✓RG/RT $\frac{R15\,300\,000\,000}{R320\,500\,000\,000} \times \frac{100}{1}\%$ ✓M = 4,77% ✓CA	1RG/RT correct values 1M multiply by 100 1CA answer OR/*OF* 1RG/RT correct values 1M multiply by 100 1CA answer NFR (3)	F L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.3.5	Education Administration plus NSFAS amount to 31,1 billion rand / *Onderwysadministrasie plus NSFAS bedrag tot 31,1 miljard rand* 9,7% ✓✓A Accept any estimation from 9,5% but less than 9,86% *Aanvaar enige skatting vanaf 9,5% maar minder as 9,86%* OR/*OF* 15,8 – 15,3 = 31,1 billion / *miljard* ✓M = 9,7% ✓A Accept any estimation from 9,5% but less than 9,86% *Aanvaar enige skatting vanaf 9,5% maar minder as 9,86%*	AO 2A correct estimation OR/*OF* 1M adding values 1A estimated value (2)	F L2
			[43]

FEB 2018

Question 2 [44 Marks]

Ques	Solution	Explanation	Topic/L
2.1.1	Stop order: an instruction to an employer or bank to pay / divert monthly or transfer regularly a certain amount to a person or an account. ✓✓ O OR Stop order: an instruction that an employee (individual) issue to the employer (bank) to make a series of future dated regular deductions ✓✓ O OR ✓✓ O Stop order: Future dated regular monthly deductions	2O explanation (2)	F L1
2.1.2	✓ M/A Difference = R940 465,89 – R536 523,25 = R403 942,64 ✓ C/A	1M/A subtraction of correct value 1CA simplification AO (2)	F L1
2.1.3	Number of years (2017 – 2029) = 12 ✓ M/A Number of months in 12 years = 12 × 12 = 144 ✓ C Number of months from 10 May to 1 November = 6 ✓ A Total number of contributions = 144 + 6 = 150 ✓ CA	1M/A calculating years 1C converting years to months 1A additional months 1CA total number of months. AO (4)	F L2
2.1.4	Total contribution value ✓ M/A = (5 × 12) × R740,22 ✓ RT = R44 413,20 ✓CA	1M/A multiplying (5 and 12) 1RT reading monthly contribution 1CA total contribution AO NPR (3)	F L2
2.1.5	a greater / an increased/ a higher / more/ bigger/ larger/ inflated / better ✓✓A	2A correct missing words (2)	F L1

Ques	Solution	Explanation	Topic/L
2.1.6	✓MA R740,22 + R740,22 × 8,5% = R740,22 + R62,9187 ✓M = R803,14 OR ✓M R740,22 × 108,5% ✓MA = R803,14 OR 740,22 × 8,5% = 62,9187 ✓MA 803,14 – 62,9187 = 740,22 ✓M	1MA percentage 1M adding two values OR 1M multiplying 1MA 108,5% OR 1MA percentage 1M subtracting values (2)	F L1
2.2.1	Hourly overtime rate = R17,76 × 1½ ✓MA = R23,68 ✓CA	1MA hours 1CA rate AO (2)	F L1
2.2.2	✓MA ✓A 2017 Sunday wage rate = 19,39 × 150% = R29,09 ✓A Total wage = 3 × 9 × R29,09 ✓M = R785,43 ✓CA OR ✓MA ✓A 2016 Sunday wage rate = R17,90 × 150% = R26,85 ✓A Total wage = 3 × 9 × R26,85 ✓M = R724,95 ✓CA	1MA increasing by 150% 1A Sunday hourly rate 1A hours per day 1M multiplying 1CA wage AO 1MA increasing by 150% 1ASunday hourly rate 1A hours per day 1M multiplying 1CA wage NPR (5)	F L2

NOV 2018

Ques	Solution	Explanation	Topic/L
2.4.1	Employer provides people job/work for pay ✓✓O OR Employer is the company/individual who offers work opportunities for pay. ✓✓O OR Employer owner of the company ✓✓O	2O explanation (2)	F L1
2.4.2	✓O ✓O Get a few months reduced income after termination of work. OR ✓O To give employee a short-term financial relief should he/she become unemployed. ✓O ✓O OR ✓O Make provision for some income when a person becomes unemployed or retrenched or retired from work.	2O reason (2)	F L1
2.4.3 (a)	✓RT ✓M B = R6 272,16 – (R1 184,40 + R350,88) = R4 736,88 ✓CA ✓M OR B = 9 × 6 × 4 / 21,93 ✓RT = R4 736,88 ✓CA	1RT amounts 1M subtracting 1CA value of B OR 1RT amounts 1M multiplying all values 1CA value of B Accept B = (R5 131,62 If 26 days used) (3)	F L1
2.4.3 (b)	1% of gross salary = R6 272,16 – R6 209,44 ✓MA = R62,72 ✓A Total UIF amount = 2 × R62,72 = R125,44 ✓CA OR ✓A Total UIF amount = 2 × (1% of R6 272,16) = 2 × R62,7216 ✓MA = R125,44 ✓CA OR Total UIF amount = 2% of R6 272,16 ✓✓ MA = R125,44 ✓CA	1MA subtracting correct values 1A simplification 1CA total amount payable OR 1A calculating 1% 1MA 2 contributions 1CA amount OR 2MA Calculating 2% of salary 1CA amount AO (3)	F L2
		[44]	

QUESTION/VRAAG 2 [41 MARKS/PUNTE]

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.1	✓A Interest refers to the amount that will be added to an account that is not settled yet / ✓A *Rente verwys na die bedrag wat by die agterstallige bedrag gevoeg word.* OR/OF ✓A ✓A Extra amount is charged on the late payments / *Ekstra bedrag wat gehef word op laat betalings.* OR/OF ✓A ✓A Extra money to be charged on overdue fees / *Ekstra geld wat op agterstallige gelde gehef word.* OR/OF ✓A ✓A Money charged for not paying fees on time / *Geld gehef vir fooie nie betyds betaal nie.* OR/OF ✓A Interest in this context is the charge levied because of unpaid fees or late payment of fees / ✓A *Dit is ekstra geld wat gehef word omdat die rekening nie op tyd betaal word nie.* (2)	1A amount charged 1A reason	F L1
2.1.2	R14 819,50 ✓✓RT	2RT balance (2)	F L1
2.1.3	✓RT $\frac{148,20}{14\,819,50} \times \frac{100}{1}\%$ ✓M = 1,000033739329937 ≈ 1% ✓CA	1RT correct values 1M multiply by 100 1CA answer (3)	F L2

	Total amount / *Totale bedrag* ✓M ✓RT = R62 594 – R6 317,70 + 2 × R395,95 – R2 087 = R54 981,90 ✓CA OR/OF	1RT reading all correct values 1M subtracting values 1CA simplification OR/OF	= R55 130,10 ✓CA OR/OF ✓M ✓RT R62 594,70 – R6317,70 + 2 x R395,95 + R148,20 – R2 087 = R55 130,10 ✓CA	1CA simplification OR/OF 1RT reading all correct values 1M subtracting values 1CA simplification (3)

Ques	Solution	Explanation	Topic/L
2.2.3 (a)	$\%\text{ increase} = \frac{17,76 - 16,40}{16,40} \times 100\%$ ✓A ✓M $= 8,29268\ldots\%$ $\approx 8,3\%$ OR $\%\text{ increase} = \frac{19,39 - 17,90}{17,90} \times 100\%$ ✓A ✓M $= 8,324\ldots\%$ $\approx 8,3\%$ OR R16,40 × 1,083 = R17,76 ✓A ✓M OR R17,90 × 1,083 = R19,39 ✓A ✓M OR R17,76 ÷ 1,083 = R16,40 ✓A ✓M OR R19,39 ÷ 1,083 = R17,90 ✓A ✓M	1M percentage 1A correct values used OR 1M percentage 1A correct values used OR 1M percentage 1A correct values used OR 1M percentage 1A correct values used OR 1M percentage 1A correct values used OR 1M percentage 1A correct values used (2)	F L1
2.2.3 (b)	A × 108,3% = 21,93 ✓RT $A = \frac{21,93}{108,3\%}$ ✓M = R20,25 ✓CA OR $A = \frac{21,93}{1,083}$ ✓RT ✓M = R20,25 ✓CA	1RT reading values 1M dividing by 108,3% 1CA amount OR 1RT reading values 1M dividing by 108,3% 1CA amount AO (3)	F L2

Ques	Solution	Explanation	Topic/L
2.2.4	2017 Total Weekly Wage ✓MA ✓RT = (6 × 9 × R17,76) + (9 × 150% × R17,76) = R959,04 + R239,76 = R1 198,80 ✓CA OR 2016 Total weekly wage ✓MA ✓RT = (6 × 9 ×R16,40) + (9 × 150% × R16,40) =R1 107,00 ✓CA	1RT reading value from the table 1MA multiply with no. of days and hours 1CA simplification OR 1RT reading value from the table 1MA multiply with no. of days and hours 1CA simplification (3)	F L2
2.3	Total Income for the day = 7 × R70 + 35 × R50 + 4 × R75 ✓✓RT ✓M = R490 + R1 750 + R300 = R2 540 ✓CA OR Income from bakkies = 7 × R70 = R490 ✓A Income from Cars = 35 × R50 = R1 750 ✓A Income from minibus = 4 × R75 = R300 ✓A Total Income = R2 540 ✓CA	2RT correct values 1M multiply price by vehicle type 1CA total income OR 1A bakkies 1A cars 1A minibus 1CA total income AO (4)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.7	Direct deposit / *Direkte deposito* ✓✓RT	2RT reading correctly Accept deposit only (2)	F L1
2.1.8	Monthly instalment / *Maandelikse paaiement* R40 386,60 ÷ 5 ✓A ✓M = R8 077,32 OR/*OF* Monthly instalment / *Maandelikse paaiement* R8 077,32 × 5 ✓A ✓M = R40 386,60 OR/*OF* Monthly instalment / *Maandelikse paaiement* $\frac{R40386,60}{R8077,32}$ ✓M = 5 ✓A	1A calculating 5 1M dividing by 5 OR/*OF* 1A calculating 5 1M multiply by 5 OR/*OF* 1M dividing correct values in correct order 1A calculating 5 (2)	F L1
2.2.1	Inflation is a measure of rate ✓A at which the cost of goods is changing over a period of time and is usually expressed as a percentage / ✓A *Inflasie is die meting van die koers waarteen die prys van goedere verander oor 'n tydperk en word gewoonlik uitgedruk in persentasie.* OR/*OF* The percentage increase ✓A of the food prices over the period 1970 – 2015 /✓A *Die persentasietoename van kosprysie oor die tydperk 1970 – 2015.* OR/*OF* Percentage increase ✓A of price ✓A over a period of time / *Persentasie verhoging van prys oor 'n tydperk*	1A percentage increase 1A time	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.2	R0,30 OR/*OF* 30c ✓✓RT	2RT correct value Accept 0,30 If the candidates only wrote 30 = max 1 mark (2)	F L1
2.2.3	R557,00 – R418,00 ✓M ✓RG = R139,00 ✓CA	AO 1RG correct amount 1M subtracting 1CA simplification (one of the 2 values must be correct) (3)	F L1
2.2.4	Percentage change / *Persentasie-verandering* $\frac{R75,00 - R0,25}{R0,25} \times \frac{100}{1}\%$ ✓RT ✓SF = 29 900 % ✓CA OR/*OF* Percentage change / *Persentasie-verandering* $\frac{75}{0,25} \times 100\% = 30\,000\%$ ✓RT ✓M Therefore % increase = 30 000% - 100% = 29 900% ✓CA	AO 1RT all correct values 1SF substitute correct values 1CA correct percentage OR/*OF* 1RT all correct values 1M subtracting 1CA correct percentage (3)	F L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.5	Cost price / *Koopprys* $\frac{100}{117,5} \times \frac{104,90}{1}$ ✓MA = R89,28 ✓A OR/*OF* Cost price / *Koopprys* $\frac{104,90}{117,5}$ ✓MA = R89,28 ✓A OR/*OF* Cost price / *Koopprys* $\frac{104,90}{117,5}$ ✓MA = R89,28 ✓A OR/*OF* Cost price / *Koopprys* $\frac{17,5}{117,5} \times$ R104,90 = R15,62 R104,90 – R15,62 ✓MA =R89,28 ✓A	AO 1MA multiplying correct values 1A answer OR/*OF* 1MA dividing correct values in the correct order 1A answer OR/*OF* 1MA dividing correct values in the correct order 1A answer OR/*OF* 1MA multiplying and subtracting correct values 1A answer (2)	F L2
2.3.1	✓✓A B OR/*OF* R241 600 000 000 ✓✓A	2A correct value (2)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.3.2	Budget is the proposed way in which money will be spent on different items / *Begroting is die voorgestelde manier hoe die geld vir verskillende items gespandeer behoort te word.* ✓✓A OR/*OF* A plan on how money is going to be spent on estimated income / *'n Plan oor hoe geld op beraamde inkomste bestee gaan word.* ✓✓A OR/*OF* A plan in how money is going to be spent / *'n Plan hoe geld uitgegee / spandeer gaan word.* ✓✓A OR/*OF* Financial plan how to spend money/finance / *Finansiële plan hoe om geld / finansiering te spandeer.* ✓✓A OR/*OF* Estimated income and expenditure of money / *Geskatte inkomste en uitgawes van geld.* ✓✓A	2A definition (2)	F L1
2.3.3	Skills development levy institutions / *Vaardigheidsontwikkelingheffingsinstellings* ✓✓RT	2RT correct sector (2)	F L1
2.3.4	Percentage of the total education budget / *Persentasie van die totale onderwysbegroting* ✓RG/RT $\frac{15,3}{320,5} \times 100\%$ ✓M = 4,77% ✓CA OR/*OF* Percentage of the total education budget / *Persentasie van die totale onderwysbegroting* ✓RG/RT $\frac{R15\,300\,000\,000}{R320\,500\,000\,000} \times \frac{100}{1}\%$ ✓M = 4,77% ✓CA	1RG/RT correct values 1M multiply by 100 1CA answer OR/*OF* 1RG/RT correct values 1M multiply by 100 1CA answer NPR (3)	F L2

NOV 2019

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.3.5	Education Administration plus NSFAS amount to 31,1 billion rand / *Onderwysadministrasie plus NSFAS bedrag tot 31,1 miljard rand* 9,7% ✓✓A Accept any estimation from 9,5% but less than 9,86% *Aanvaar enige skatting vanaf 9,5% maar minder as 9,86%* OR/*OF* 15,8 + 15,3 = 31,1 billion / *miljard* ✓M = 9,7% ✓A Accept any estimation from 9,5% but less than 9,86% *Aanvaar enige skatting vanaf 9,5% maar minder as 9,86%*	AO 2A correct estimation OR/*OF* 1M adding values 1A estimated value (2)	F L2
			[41]

QUESTION/*VRAAG* 2 [42 MARKS/*PUNTE*]

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.1	Market value/*Markwaarde* = R944 630,00 Nine hundred and forty four thousand six hundred and thirty rand. ✓✓A *Negehonderd vier en veertig duisend ses honderd en dertig rand.*	2A correct value in words NPU (2)	F L1
2.1.2	Amount of VAT/*Bedrag vir BTW* R836,02 × $\frac{15}{100}$ ✓MA = R125,40 ✓CA OR/*OF* R836,02 × 1,15 ✓MA = R961,42 R961,42 – R836,02 = R125,40 ✓CA	1MA correct value × $\frac{15}{100}$ 1CA simplification OR/*OF* 1MA correct value × 1,15 1CA simplification (2)	F L1
2.1.3	Litres/*liter* OR/*OF* ℓ ✓✓A	2A correct unit Accept dm^3 (2)	F L1
2.1.4	Monthly sewer charge/*Maandelikse rioolheffingkoste* A = R378,95 ✓✓A	2A correct charge (2)	F L1
2.1.5	Total water charge/*Totale water koste* ✓MA ✓RT B = (6 × R8,28) + (4 × R8,79) + (2 × R15,00) = R49,68 + R35,16 + R30,00 ✓M = R114,84 ✓CA	1MA identify 6, 4, 2 1RT identify R8,28; R8,79; R15,00 1M adding (at least 2 correct values) 1CA simplification (4)	F L2

2.2.1	Inverse proportion/*Omgekeerde eweredigheid* ✓✓A OR/*OF* Indirect proportion/*Indirekte eweredigheid*	2A type of proportion (2)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.2	6 ✓✓A	2A correct number (2)	F L1
2.2.3	Amount per person/*Bedrag per persoon* = $\frac{\text{R3 000,00}}{7}$ ✓RT ✓MA = R428,57 ✓CA	1RT correct cost (R3 000) 1MA dividing by 7 1CA simplification (3)	F L1
2.2.4 (a)	$\frac{\text{R17 000,00}}{\text{R500,00}}$ ✓MA = 34 months/*maande* ✓CA	1MA dividing by R500,00 1CA simplification AO (2)	F L1
2.2.4 (b)	Interest rate/*Rentekoers* = 8,30% ✓✓A	2A correct interest rate (2)	F L1
2.2.4 (c)	Interest for 1 year/*Rente vir 1 jaar* = R17 000,00 × $\frac{8,30}{100}$ ✓M Interest for 3 years/*Rente vir 3 jaar* = R1 411,00 × 3 = R4 233,00 ✓CA = R4 200,00 ✓R OR/*OF* Interest earned for 3 years /*Rente verdien vir 3 jaar* R17 000,00 × $\frac{8,30}{100}$ × 3 ✓M = R4 233,00 ✓CA = R4 200,00 ✓R	CA from Question 2.2.4 (b) 1M interest calculation 1CA simplification 1R rounding OR/*OF* 1M interest calculation 1CA simplification 1R rounding (3)	F L2
2.2.4 (d)	Percentage point difference/*Persentasiepunte verskil* 8,46% − 7,76% ✓RT = 0,7% ✓CA	1RT correct values 1CA simplification AO (2)	F L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.4 (e)	✓RT 18 months/*maande* ✓A ✓A = 1 year and 6 months/*1 jaar en 6 maande*	1RT reading from table 1A number of years 1A number of months AO (3)	F L1
2.3.1	✓RT R242 700 million/*miljoen* ✓A OR/*OF* ✓RT R242 700 000 000 ✓A	1RT correct value (2 427) 1A number in millions NPU (2)	F L1
2.3.2	Total income received/*Totale inkomste ontvang*: 1 370 + 242,7 + 180,3 + 31,5 ✓MA A = 1 824,5 ✓CA	1MA adding ALL correct values 1CA simplification NPU (wrote billions or rands) AO (2)	F L1
2.3.3	Other/*Ander* ✓RT 1 823,72 − (278,4+262,4+222,6+211,0 +209,2+208,5+ 202,2 +112,7) ✓M B = 1 823,72 − 1 707 ✓MA = 116,72 ✓CA	1RT reading correct values 1M adding all the values 1MA subtracting from total 1CA value of B NPU (4)	F L2
2.3.4	Community development/*Gemeenskapsontwikkeling* ✓RT = $\frac{\text{R208,5}}{\text{R1 823,72}}$ × 100% ✓M = 11,432676075% ✓CA ***ACCEPT ONLY FOR AFRIKAANS CANDIDATES:*** Social development/*Maatskaplikeontwikkeling* ✓RT = $\frac{\text{R278,4}}{\text{R1 823,72}}$ × 100% ✓M = 15,265501285% ✓CA	1RT both correct values 1M percentage calculation 1CA simplification 1RT both correct values 1M percentage calculation 1CA simplification NPR (3)	F L2
		[42]	

MEASUREMENT

NOV 2017

QUESTION/*VRAAG* 3 [18 MARKS/*PUNTE*]

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.1.1	15 cm + 17 cm + 19 cm + 21 cm ✓A = 72 cm × 10 ✓CA = 720 mm ✓CA	1A adding of correct values 1CA conversion 1CA answer in mm (3)	M L1
3.1.2a	Diameter / *Deursnee* = 2 × radius = 2 × 14 cm ✓M = 28 cm ✓A	AO 1M multiplying by 2 1A diameter (2)	M L1
3.1.2b	Volume of a cylinder = $\pi \times r^2 \times$ height *Volume van 'n silinder* = $\pi \times r^2 \times$ *hoogte* Volume of a cylinder = 3,142 × $(14)^2$ × 15 cm ✓SF = 3,142 × 196 cm^2 × 15 cm ✓S = 9 237,48 cm^3 ✓CA	AO 1SF substitution 1S squaring 14 1CA simplification (3)	M L2
3.1.3	The perimeter of a shape is the total distance around the edges defining the outline of that shape / ✓✓A *Die omtrek van 'n vorm is die totale afstand om die sye wat die uitleg van die vorm definieer.* OR/*OF* Total distance around the shape / *Totale afstand rondom 'n voorwerp* ✓✓A	2A explanation (2)	M L1
3.1.4	Area of a rectangle = length × width *Area van 'n reghoek = lengte × breedte* = 15 cm × 12 cm ✓SF = 180 cm^2 ✓CA	1SF correct substitution 1CA simplification 15 cm × 11 cm = 1 155 cm^2 Max 1 math (2)	M L1
3.2.1	Amount / *Hoeveelheid* in kg = 3,5 ÷ 2,25 ✓C = 1,556 ✓A	1C conversion 1A simplification Accept 1,56 kg ; 1,6 kg 1,5 only = 0 marks (2)	M L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.2	1 ml flour = 0,7 g flour / *1 ml meel = 0,7 g meel* $\frac{625}{1}$ × 0,7 g ✓C = 437,5 g ✓A	1C conversion 1A simplification (2)	M L2
3.2.3	°C = (°F − 32°) ÷ 1,8 °C = (356° − 32°) ÷ 1,8 ✓SF °C = (324°) ÷ 1,8 = 180 °C ✓A	1SF correct substitution 1A simplification (2)	M L2
		[18]	

FEB 2018

QUESTION 3 [25 MARKS]

Ques	Solution	Explanation	Topic/L
3.1.1	✓RT ✓RT ✓RT ✓RT 6 months to 2 years. OR (½ year to 2 years) OR 6 months to 24 months ✓RT ✓RT	2RT age Accept 23-24 months (2)	M L1
3.1.2	8 kg ✓✓RT	2RT mass/weight (2)	M L1
3.1.3	12 months to 15 months ✓✓ RT	2RT (one age in this range) (2)	M L1
3.1.4	February ✓✓A	2Acorrect month (2)	M L1
3.1.5	$BMI = \frac{\text{weight (in kg)}}{(\text{height in m})^2}$ $19,5\ kg/m^2 = \frac{11,2}{(\text{height in m})^2}$ ✓ SF ✓ M Height = $\sqrt{\frac{11,2}{19,5}}$ ✓ M = 0,758 m ✓ CA	1SF correct values 1M new subject 1M finding sq. root 1CA simplification AO (4)	M L2
3.2.1	Distance = $\frac{55\ \text{litre}}{7,6\ \text{litre}} \times 100\ \text{km}$ ✓ MA ✓ MA = 723,68 = 724 km ✓ R	1MA multiply by 100 1MA divide by 7,6 1R distance AO (3)	M L2
3.2.2	Average speed = $\frac{\overset{\checkmark SF}{189}}{01h45} = \frac{189}{1,75}$ ✓ C = 108 km/h ✓ CA	1C to hours 1SF correct values 1CA Average speed AO (3)	M L2
3.3.1	Volume = 53,34cm × 17,78cm × 42,32 cm ✓SF = 40 135,66 cm^3 ✓ CA = $\frac{40\ 135,66}{1000\ \checkmark MA}$ litres = 40 litres ✓ R	1SF correct substitution 1CA volume 1MA dividing by 1 000 1R volume in litres (4)	M L3
3.3.2	$P_{\text{not}} = \frac{3}{12}$ or $\frac{12}{48}$ ✓A ✓A = 0,25 ✓CA	1A numerator 1A denominator 1CA decimal AO (3)	P L2
			[25]

NOV 2018

QUESTION/*VRAAG* 3 [18 MARKS/*PUNTE*]

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.1.1	15 cm + 17 cm + 19 cm + 21 cm ✓A = 72 cm × 10 ✓CA = 720 mm ✓CA	1A adding of correct values 1CA conversion 1CA answer in mm (3)	M L1
3.1.2a	Diameter / *Deursnee* = 2 × radius = 2 × 14 cm ✓M = 28 cm ✓A	AO 1M multiplying by 2 1A diameter (2)	M L1
3.1.2b	Volume of a cylinder = $\pi \times r^2 \times$ height *Volume van 'n silinder* = $\pi \times r^2 \times$ *hoogte* Volume of a cylinder = 3,142 × $(14)^2$ × 15 cm ✓SF = 3,142 × 196 cm^2 × 15 cm ✓S = 9 237,48 cm^3 ✓CA	AO 1SF substitution 1S squaring 14 1CA simplification (3)	M L2
3.1.3	The perimeter of a shape is the total distance around the edges defining the outline of that shape / ✓✓A *Die omtrek van 'n vorm is die totale afstand om die rye wat die uitleg van die vorm definieer.* OR/*OF* Total distance around the shape / *Totale afstand rondom 'n voorwerp* ✓✓A	2A explanation (2)	M L1
3.1.4	Area of a rectangle = length × width *Area van 'n reghoek* = *lengte* × *breedte* = 15 cm × 12 cm ✓SF = 180 cm^2 ✓CA	1SF correct substitution 1CA simplification 35 cm × 33 cm = 1 155 cm^2 Max 1 mark (2)	M L2
3.2.1	Amount / *Hoeveelheid* in kg = 3,5 × 2,25 ✓C = 1,556 ✓A	1C conversion 1A simplification Accept 1,56 kg ; 1,6 kg 1,5 only = 0 marks (2)	M L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.2	1 mℓ flour = 0,7 g flour / *1 mℓ meel* = *0,7 g meel* $\frac{625}{1} \times 0,7\ g$ ✓C = 437,5 g ✓A	1C conversion 1A simplification (2)	M L2
3.2.3	°C = (°F − 32°) ÷ 1,8 °C = (356° − 32°) ÷ 1,8 ✓SF °C = (324°) ÷ 1,8 = 180 °C ✓A	1SF correct substitution 1A simplification (2)	M L2
		[18]	

NOV 2019

QUESTION/*VRAAG* 3 [26 MARKS/*PUNTE*]

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.1.1	Volume = It is the amount of solids or liquids an object can take/hold. *Volume = Is die hoeveelheid vaste of vloeistowwe 'n voorwerp kan vat.* ✓✓A OR/*OF* Volume is the amount of space occupied by an object *Volume is die hoeveelheid spasie opgeneem deur die voorwerp.*	2A explanation (2)	M L1
3.1.2	Volume = side × side × height/*lengte* × *breedte* × *hoogte* ✓C = 0,5 m × 0,5 m × 0,08 m ✓SF = 0,02 m^3 ✓CA OR/*OF* $\frac{20\ 000\ cm^3}{1000000}$ ✓SF 50 cm × 50 cm × 8 cm = 0,02 m^3 ✓C ✓CA	1SF correct substitution 1C conversion 1CA simplification OR/*OF* 1 SF correct substitution 1C conversion 1CA simplification (3)	M L2
3.2.1	Area of one block = length × breadth = 50 cm × 50 cm ✓SF = 2 500 cm^2 Area of 12 blocks = 0,25 m^2 × 12 ✓MA = 3 m^2 ✓CA OR/*OF* Area of one block = length × breadth = 0,5 m × 0,5 m ✓SF = 0,25 m^2 Area of 12 blocks = 0,25 m^2 × 12 ✓MA = 3 m^2 ✓CA OR/*OF*	CA from Question 3.1.2 1SF substituting correct values 1MA multiply by 12 1CA answer in m^2 OR/*OF* 1SF substituting correct values 1MA multiply by 12 1CA answer in m^2 OR/*OF*	M L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	Area of 12 blocks = 12 × (side × side) *Area van 12 blokke* = 12 × (0,5 m × 0,5 m) ✓SF = 12 × 0,25 m^2 ✓MA = 3 m^2 ✓CA OR/*OF* Area of 12 blocks = 12 × (side × side) *Area van 12 blokke* = 12 × (50 cm × 50 cm) ✓SF = 12 × 2 500 cm^2 ✓MA = 3 m^2 ✓CA	1SF substituting correct values 1MA multiply by 12 1CA answer in m^2 OR/*OF* 1SF substituting correct values 1MA multiply by 12 1CA answer in m^2 (3)	
3.2.2	Area of walkway ✓SF 4,05 m × 1,45 m = 5,8725 m^2 ✓A Area to be covered with pebbles = 5,8725 m^2 – 3 m^2 ✓MCA = 2,8725 m^2 ✓CA OR/*OF* Area to be covered with pebbles ✓SF (4,05 m × 1,45 m) – 3 m^2 ✓A = 5,8725 m^2 – 3 m^2 ✓MCA = 2,8725 m^2 ✓CA OR/*OF* Area of walkway ✓SF 405 cm × 145 cm = 58 725 cm^2 ✓A Area to be covered with pebbles = 58 725 cm^2 – 30 000 cm^2 ✓MCA = 28 725 cm^2 ✓CA OR/*OF*	CA from Question 3.2.1 1SF substitution 1A simplification 1MCA subtracting area of blocks 1CA simplification OR/*OF* 1SF substitution 1A simplification 1MCA subtracting area of blocks 1CA simplification OR/*OF* 1SF substitution 1A simplification 1MCA subtracting area of blocks 1CA simplification OR/*OF*	M L3

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.2	Area to be covered with pebbles ✓SF (405 cm × 145 cm) – 30 000 cm^2 ✓A = 58 725 cm^2 – 30 000 cm^2 ✓MCA = 28 725 cm^2 ✓CA	1SF substitution 1A simplification 1MCA subtracting area of blocks 1CA simplification NPR (4)	
3.2.3	$\frac{5,7\ m^2}{0,36\ m^2}$ ✓MA = 15,833 ✓CA = 16 bags of pebbles/*sakkies klippies* ✓RCA	1MA dividing by 0,36 m^2 1CA simplification 1RCA rounding (3)	M L2
3.3.1	Length of large window frame/*Lengte van die groot vensterraam* $\frac{890\ mm}{10}$ ✓MA = 89 cm ✓CA	1MA dividing by 10 1CA simplification AO (2)	M L1
3.3.2	Perimeter/*Omtrek* ✓MA = 18,5 cm + 18,5 cm + 18,5 cm + 18,5 cm = 74 cm ✓CA OR/*OF* Perimeter/*Omtrek* = 4 × 18,5 cm ✓MA = 74 cm ✓CA ***AFRIKAANS ONLY OMIT SUB QUESTION 3.3.2 – UPSCALE FROM 24 TO 26***	1MA adding 4 sides 1CA simplification OR/*OF* 1MA side multiplied by four 1CA simplification (2)	M L1
3.3.3	Diameter/*Deursnee* = 1,85 cm × 2 = 3,7 cm ✓A $\frac{18,5\ cm}{3,7\ cm}$ ✓M = 5 beads ✓CA	1A diameter 1M dividing by diameter 1CA simplification (3)	M L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.3.4	✓MA 2 × 18,5 cm = $\frac{3}{4}$ of the width of the large window/*van die wydte van die grooter venster* ✓A 37 cm = $\frac{3}{4}$ of the width of the large window/*van die wydte van die grooter venster* Width of large window/*breedte van groot venster* =37 cm × $\frac{4}{3}$ ✓MA = 49,33 cm ✓CA	1MA multiply 18,5 by 2 1A simplification 1MA multiply with inverse 1CA simplification NPR (4)	M L2
		[26]	

MAPS, PLANS AND OTHER REPRESENTATIONS OF THE PHYSICAL WORLD
NOV 2017

QUESTION/VRAAG 4 [24 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.1.1	South West OR SW Suidwes OF SW ✓✓A	2A direction (2)	MPL 2
4.1.2	Namaqua National Park / Namakwa Nasionale Park ✓✓RM	2RM national Park (2)	MPL 1
4.1.3	✓✓RM ✓RM Kenmoes, Kakamas, Pofadder (Any 2 of the 3/enige 2 van die 3)	2RM first correct town 1RM second correct town (3)	MPL 1
4.1.4	Ratio scale OR number scale OR numerical scale Verhoudingskaal OF nommerskaal OF getalskaal ✓✓A	2A ratio / number / numerical Accept unit ratio (2)	MP L1
4.1.5	✓A Measured distance /Gemete afstand = 135 mm 1 : 3 007 874 135 mm × 3 007 874 ✓M = 406 062 990 mm = 406 062 990 / 1 000 000 ✓C = 406 km ✓R OR/OF ✓A 13,5 cm × 3 007 874 ✓M 40606299cm / 100 000 ✓C = 406,06299 km ≈ 406 km ✓R	1A measures distance 1M using scale 1C conversion 1R to the nearest km (Range: 130 mm to 140 mm) OR/OF 1A measures distance 1M using scale 1C conversion 1R to the nearest km (Range: 13 cm to 14 cm) (4)	MPL 3
4.2.1	Voortrekker Road / Voortrekkerstraat ✓✓RM OR/OF N14 ✓✓RM	2RM correct road (2)	MPL 1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.2.2	Rivier Street / Riverstraat ✓✓RM	2RM correct road (2)	MP L2
4.2.3	Debo-Lodge / Debo-Lodge ✓✓RM	2RM correct road (2)	MP L2
4.2.4	Time / Tyd = 2,34 km / 40 km/h ✓1F = 0,0585 h × 60 ✓C = 3,51 minutes ✓CA	1F calculating time 1C multiply by 60 1CA simplification NPR (3)	MP L2
4.2.5	P = 11 ✓A / 42 ✓A OR/OF 0,310 OR/OF 31% OR/OF ✓MA 1 − 29/42 = 13/42 ✓A	1A numerator (independent) 1A denominator OR/OF 1MA subtracting from 1 1A simplification (2)	P L2
		[24]	

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QUESTION 4 [19 MARKS]			
Ques	Solution	Explanation	Topic/L
4.1.1	✓A ✓A N10 and N2	1A N10 1A N2 (2)	MP L1
4.1.2	✓✓RT Mountain Zebra N.P	2RTcorrect name (2)	MP L1
4.1.3	Kirkwood ✓✓A	2A correct hometown (2)	MP L2
4.1.4	✓RT ✓M Distance = 25 km + (207 km – 22 km) + 24 km = 234 km ✓CA OR ✓RT ✓M Distance = 24 km + (380 km – 195 km) + 25 km = 234 km ✓CA	1RT correct distances 1M adding 1CA difference OR 1RT correct distances 1M adding 1CA difference AO (3)	MP L2
4.2.1	3750 mm ✓✓A	2A distance (2)	MP L1
4.2.2	Total exterior length of western wall = 3 550 mm + 3750 mm✓A = 7 300 mm = 7,3 m ✓C OR Total exterior length of western wall = 3, 55 m + 1, 7 m + 2, 05 m ✓A = 7, 3 m ✓C	1A adding 3 correct distances 1C conversion to m OR 1A adding correct distances of Eastern wall (opp. Side //) 1C conversion to m AO (2)	MP L1
4.2.3	Living room ✓✓A	2A (Passage and/or Kitchen maximum 1 mark) (2)	MP L1
4.2.4	Bedroom 2 ✓✓A	2A room (2)	MP L1
4.2.5	Wash basin/sink/water basin OR Shower OR ✓✓A Cupboard	2A any item (2)	MP L1
		[19]	

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QUESTION/VRAAG 4 [24 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.1.1	South West OR SW Suidwes OF SW ✓✓A	2A direction (2)	MPL 2
4.1.2	Namaqua National Park / Namakwa Nasionale Park ✓✓RM	2RM national Park (2)	MPL 1
4.1.3	✓✓RM ✓RM Kenmoes, Kakamas, Pofadder (Any 2 of the 3/enige 2 van die 3)	2RM first correct town 1RM second correct town (3)	MPL 1
4.1.4	Ratio scale OR number scale OR numerical scale Verhoudingskaal OF nommerskaal OF getalskaal ✓✓A	2A ratio / number / numerical Accept unit ratio (2)	MP L1
4.1.5	✓A Measured distance /Gemete afstand = 135 mm 1 : 3 007 874 135 mm × 3 007 874 ✓M = 406 062 990 mm = 406 062 990 / 1 000 000 ✓C = 406 km ✓R OR/OF ✓A 13,5 cm × 3 007 874 ✓M 40606299cm / 100 000 ✓C = 406,06299 km ≈ 406 km ✓R	1A measures distance 1M using scale 1C conversion 1R to the nearest km (Range: 130 mm to 140 mm) OR/OF 1A measures distance 1M using scale 1C conversion 1R to the nearest km (Range: 13 cm to 14 cm) (4)	MPL 3
4.2.1	Voortrekker Road / Voortrekkerstraat ✓✓RM OR/OF N14 ✓✓RM	2RM correct road (2)	MPL 1

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Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.2	Rivier Street / *Rivierstraat* ✓✓RM	2RM correct road (2)	MP L2
4.2.3	Debs-Lodge / *Debs-Lodge* ✓✓RM	2RM correct road (2)	MP L2
4.2.4	Time / *Tyd* = $\frac{2,34\text{ km}}{40\text{ km/h}}$ ✓SF = 0,0585 h × 60 ✓C = 3,51 minutes ✓CA	1SF calculating time 1C multiply by 60 1CA simplification NPR (3)	MP L2
4.2.5	$P = \frac{13}{42}$ ✓A OR/*OF* 0,310 OR/*OF* 31% OR/*OF* ✓MA $1 - \frac{29}{42} = \frac{13}{42}$ ✓A	1A numerator (independent) 1A denominator OR/*OF* 1MA subtracting from 1 1A simplification (2)	P L2
		[24]	

QUESTION/*VRAAG 4* [24 MARKS/*PUNTE*]			
Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.1.1	Camping, swimming, dining(eating) and checking-in (enquiries/registration/making payments). *Kampeer, zwem en eet en inboek (navrae/registrasie/betalings maak).* ✓✓✓✓A	4A 4 correct activities (4)	MP L1
4.1.2	Umngeni ✓✓RT	2RT reading from map (2)	MP L1
4.1.3	5 restaurants / *restaurante* ✓✓RT	2RT reading from map (2)	MP L1
4.1.4	Bar Scale/Staafskaal ✓✓A	2A correct scale Accept: Line scale/*Lynskaal*/ *Balkskaal* (2)	MP L1
4.1.5	✓A 4,2 cm = 4 km 1 cm = 0,9524 km ✓M ✓MA 10 cm = 9,524 km ≈ 10 km ✓CA OR/*OF* $\frac{10\text{ cm}}{4,2\text{ cm}} \times 4\text{ km}$ ✓M ✓MA ✓A = 9,524 km ≈ 10 km ✓CA OR/*OF* ✓A 2,1 cm = 2 km 1 cm = 0,9524 km ✓M ✓MA 10 cm = 9,524 km ≈ 10 km ✓CA OR/*OF*	1A measure bar scale 1M concept of scale 1MA multiply by scale 1CA conversion OR/*OF* 1A measure bar scale 1M concept of scale 1MA multiply by scale 1CA conversion OR/*OF* 1A measure bar scale 1M concept of scale 1MA multiply by scale 1CA conversion OR/*OF*	MP L2

DATA HANDLING

NOV 2017

QUESTION/*VRAAG 5* [36 MARKS/*PUNTE*]			
Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.1.1	R2 085 600 000 ✓✓RT OR/*OF* R2 085,6 million / *miljoen* ✓✓RT OR/*OF* R2,0856 billion / *miljard* ✓✓RT	2RT correct amount Table value = max 1 mark (2)	D L1
5.1.2	$\frac{\text{R1 323} + \text{R2 085,6} + \text{R3 162} + \text{R2 158} + \text{R1 847} + \text{R2 732}}{6}$ ✓RT ✓M million / *miljoen* ✓CA = R2 217 933 333 *OR/OF* R2 217,933333 million / *miljoen*	AO 1RT correct values 1M concept of mean 1CA simplification NPR (3)	D L2
5.1.3	Maximum = 46,1 thousand / *duisend* ✓A ✓A OR/*OF* Maximum = 46 100 ✓✓RT	1A correct value 1A unit OR/*OF* 2RT correct maximum (2)	D L1
5.1.4	$A = \frac{2\,158\,000\,000}{3\,441\,000\,000\,000} \times \frac{100\%}{1}$ ✓RT ✓M = 0,062714327% ✓CA = 0,06% ✓R	AO 1RT correct values 1M multiply by 100 1CA simplification 1R rounding If omitted zeros = max 3 marks (4)	D L2
5.2.1	A person who is able and willing to work, but cannot find work / *'n Persoon wat geskik en gewillig is om te werk, maar nie 'n werk kry nie.* ✓✓A OR/*OF*	2A explanation	D L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	People who are without work / *Mense wat sonder werk is* ✓✓A OR/*OF* People who are jobless / *Mense wat werkloos is* ✓✓A OR/*OF* Not earning a salary / wage / income *Verdien nie 'n salaris / loon / inkomste nie* ✓✓A OR/*OF* Retrenched / *Afgedank* ✓✓A	2A explanation (2)	
5.2.2	X = 1 748 − 506 ✓M = 1 242 ✓A OR/*OF* ✓M X = 16 172 − (1 391 + 806 + 4 991 + 2 513 + 1 417 + 321 + 999 + 2 492) = 1 242 ✓A	1M subtracting correct values 1A simplification 1M subtracting correct values 1A simplification No penalty for including zeros (2)	D L1
5.2.3	Questionnaire / *vraelys* ✓✓A OR/*OF* Survey / *opname* ✓✓A OR/*OF* Population census / *populasie sensus* ✓✓A OR/*OF* Document analysis / *dokument analise* ✓✓A OR/*OF* Interview / *onderhoud* ✓✓A	2A correct answer (2)	D L1

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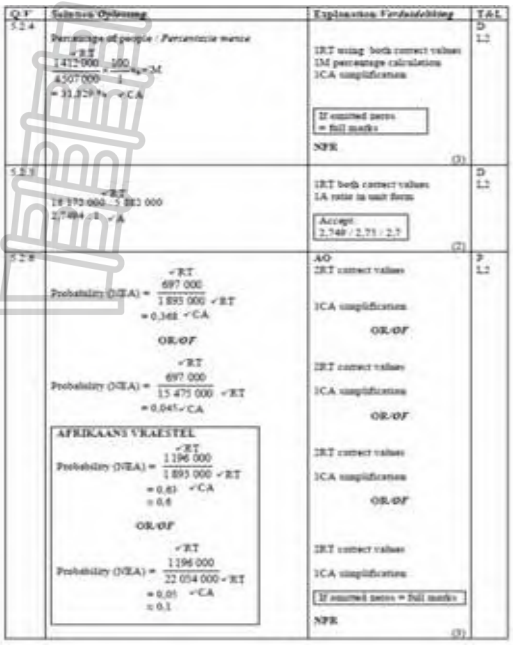
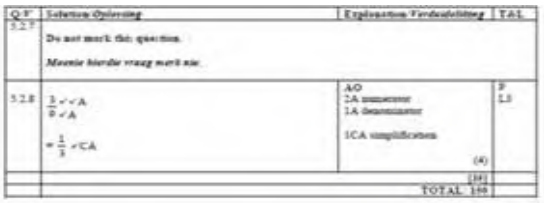
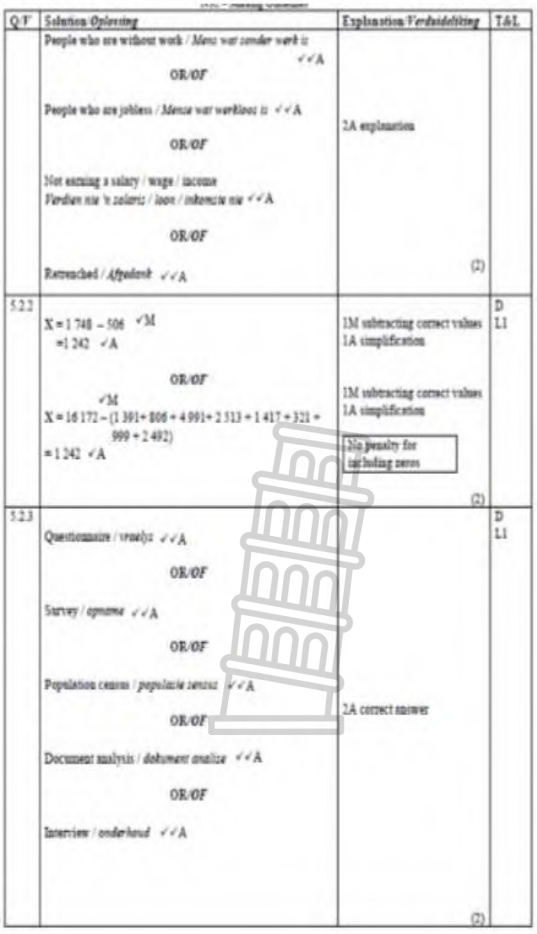




NOV 2018



Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.2.4	Percentage of people / *Persentasie mense* $\frac{\checkmark RT}{\frac{1\,412\,000}{4\,507\,000}} \times \frac{100}{1}\%\checkmark M$ $= 31{,}329\ \%\ \checkmark CA$	1RT using both correct values 1M percentage calculation 1CA simplification If omitted zeros = full marks NFR (2)	D L2
5.2.5	$\frac{\checkmark RT}{16\,177\,000 : 5\,881\,000}$ $2{,}749 : 1\ \checkmark A$	1RT both correct values 1A ratio in unit form Accept: 2,749 / 2,75 / 2,7 (2)	D L2
5.2.6	Probability (≤RAA) = $\frac{\checkmark RT\ 697\,000}{1\,893\,000} \checkmark RT$ $= 0{,}368\ \checkmark CA$ *OR/OF* Probability (≥RAA) = $\frac{\checkmark RT\ 697\,000}{15\,475\,000} \checkmark RT$ $= 0{,}045 \checkmark CA$ AFRIKAANS VRAESTEL Probability (NRA) = $\frac{\checkmark RT\ 1\,196\,000}{1\,895\,000} \checkmark RT$ $= 0{,}63\ \checkmark CA$ $\approx 0{,}6$ *OR/OF* Probability (NRA) = $\frac{\checkmark RT\ 1\,196\,000}{22\,054\,000} \checkmark RT$ $= 0{,}05\ \checkmark CA$ $\approx 0{,}1$	A/O 2RT correct values 1CA simplification *OR/OF* 2RT correct values 1CA simplification *OR/OF* 2RT correct values 1CA simplification *OR/OF* 2RT correct values 1CA simplification If omitted zeros = full marks NFR (2)	P L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.2.7	Do not mark this question. *Moenie hierdie vraag merk nie.*		
5.2.8	$\frac{3}{9} \checkmark\checkmark A$ $= \frac{1}{3}\ \checkmark CA$	A/O 2A numerator 1A denominator 1CA simplification (4)	P L3
		[26]	
		TOTAL: 140	

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QUESTION/*VRAAG* 5 [28 MARKS/*PUNTE*]			
Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.1.1	Questionnaires OR Interviews OR Survey OR Document analysis OR Research OR Observation *Vraelys OF Onderhoud OF Meningspeiling (opname) OF Dokument analise OF Navorsing OF Observeer* ✓✓A	2A means of collecting data (2)	D L1
5.1.2	% Yard trimmings/*Werfuitvoersels* ✓MA = 100% − (3,4% + 11,2% + 49,7% + 3,3% +9,0%) = 100% − 76,6% ✓M = 23,4% ✓CA	1MA adding all correct values 1M subtracting from 100% 1CA simplification AO (3)	D L2
5.1.3	% Textiles/*Tekstiele* = 11,2% − (1,6% + 2,3% + 2,9% + 1,7%) = 11,2% − 8,5% ✓MA = 2,7% ✓CA	1MA subtracting from 11,2% 1CA simplification AO (2)	D L2
5.1.4	Tons of plastic/*Ton plastiek* ✓RT $91\,160\,000 \times \frac{3,4}{100}$ ✓MA = 3 099 440 tons/*ton* ✓CA *OR/OF* ✓RT $91{,}16 \times \frac{3,4}{100}$ ✓MA = 3,09944 million tons/*ton* ✓CA	1RT correct total 1MA multiply by 3,4% 1CA simplification *OR/OF* 1RT correct total 1MA multiply by 3,4% 1CA simplification NFR (3)	D L2
5.1.5	Cans, pieces of a motor vehicles, household appliances; scrap metal OR any other product that includes metal / *Blikke, dele van 'n motorfiets, afvalmetaal OF enige ander produk wat metaal bevat.* ✓✓A	2A metal products that are recyclable (2)	D L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.1.6	Stacked bar graph OR Compound bar graph OR Bar graph *Saamgestelde staaf grafiek OF Stapel/balk grafiek OF Staaf grafiek* ✓✓A	2A type of graph (2)	D L1
5.1.7	Probability/*Waarskynlikheid* Other/*Ander* = 11,2% ✓RT ✓MA 1,7% + 1,6% + 2,3% + 2,9% = 8,5% $\frac{8,5}{11,2}$ ✓M = 0,7589285 ✓CA *OR/OF* ✓A $\frac{\checkmark RT}{2,7}$ $1 - \frac{}{11,2}$ ✓MA = 0,7589285 ✓CA	1RT correct values 1MA adding all values 1M dividing 1CA simplification *OR/OF* CA from Question 5.1.3 1RT correct values 1A for the number one 1MA subtracting 1CA simplification NFR (4)	P L2
5.2.1	10 ✓✓A	2A correct number (2)	D L1
5.2.2	Number of seats/*setels* ✓A 33 : 27 ✓M = 11 : 9 ✓CA	1A correct values 1M ratio in correct order 1CA simplified ratio Accept unit ratio or fractional form (3)	D L1
5.2.3	National Freedom Party / NFP *Nasionale Vryheidspartij/NVP/NFP* ✓✓RT	2RT reading from table (2)	D L1