KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

CURRICULUM GRADE 10 – 12

DIRECTORATE

LEARNER SUPPORT DOCUMENT

GRADE 11

MATHEMATICAL LITERACY

2025

**This support document was developed and collated by KZN
Provincial Mathematical Literacy Subject Advisors and Lead Teachers**

PREFACE

This document serves to assist Mathematical Literacy learners on how to deal with curriculum. It also captures the challenging topics in Grade 11 work. Activities should serve as a guide on how to assess topics dealt with in this document.

It is hoped that teachers will find this document useful for better learner performance in 2025 and that they will benefit from this document.

Provincial Mathematical Literacy Subject Advisors and Lead Teachers are to be commended for their contributions and cooperation during the preparation and production of this document.

The document will cover the following:

A	DATA HANDLING	
B	FINANCE	
C	MEASUREMENT	
D	MAPS & PLANS	
E	PROBABILITY	

Topics in this Learner Support Document are arranged according to the 2025 Grade 11 ATP

Distribution of topics, duration and total marks per paper

PAPER	TOPICS	DURATION	TOTAL	DATE	MARKING
1	Data handling Finance Probability	2 hours	100	November	Internal
2	Measurement Maps, plans and representations of the physical world Probability	2 hours	100	November	Internal

Topics and weight per topic per paper

	TOPICS	%	100 mark paper
PAPER 1	Finance	60% ±5%	60
	Data Handling	35% ±5%	35
	Probability	5%	5
		100%	100 marks
PAPER 2	Measurement	55 % ±5%	55
	Maps, plans and representations of the physical world	40% ±5%	40
	Probability	5%	5
		100%	100 marks

**NOTE:

*   *Included in Paper 2 (Questions 4 and/ or 5), sections in Finance: (Income, Expenditure, Profit/loss, Income-and-Expenditure statements and Budgets, Cost price and selling price) can be included where there is direct link to Measurement and Maps and Plans(Only ± 5% (5 Marks))*

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Format of the question papers and weighting of topics

	PAPER 1	**PAPER 2**
Weighting of topics	Finance 60% (±5) Data Handling 35% (±5) Probability ±5%	Measurement 55% (±5) 'Maps, plans and other representation of the physical world 40% ((±5) Probability ±5%
Structure and scope of content and/or skills	**Question 1**: 20% / 20 marks (± 5 marks) Level 1 questions from Finance and Data Handling **Question 2** Finance **Question 3** Data Handling **Question 4 & 5** Integrated context on Finance and Data Handling **Probability** will be examined in the context of one or more of the other questions.	**Question** 1: 20% / 20 marks (± 5 marks) Level 1 questions from Measurement and Maps, plans **Question 2** 'Maps and plans **Question 3** Measurement **Question 4 & 5** Integrated context on 'Measurement and Maps and plans **Can include finance , ± 5% (± 5 marks)** *(Income, Expenditure, Profit/loss, Income-and-Expenditure statements and Budgets, Cost price and Selling price) where there is direct link to Measurement and Maps and Plans.* **Probability** will be examined in the context of one or more of the other questions.
N.B. Each paper may have 4 or 5 questions		

Distribution of marks according to taxonomy levels

	Paper 1	**Paper 2**	**OVERALL ALLOCATION**
Level 1: Knowing	30% (±30 marks)	30% (±30 marks)	30% ± 5%
Level 2: Applying routine procedures in familiar contexts	30% (±30 marks)	30% (±30 marks)	30% ± 5%
Level 3: Applying multi-step procedures in a variety of contexts	20% (±20 marks)	20% (±20 marks)	20% ± 5%
Level 4: Reasoning and reflecting	20% (±20 marks)	20% (±20 marks)	20% ± 5%

ELABORATION OF THE CONTENT FOR GRADE 11 (CAPS)

		TOPIC: DATA HANDLING		
Section	**Level 1: Knowing**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Developing questions and collecting data	* Read information directly from a given questionnaire/survey (e.g. *the name of the organisation for which the questionnaire is being conducted*). * Complete a given questionnaire.	* Conduct a given questionnaire/survey with a group of people.	* Decide on appropriate questions to include on a questionnaire/survey, construct and then conduct the questionnaire/survey.	* Critique the questions/layout of a questionnaire/survey.
Classifying and organising data	* Sort data from smallest to biggest. * Count the number of values in a data set. * State the difference between categorical data and numerical data; discrete and continuous data. * Read information from frequency tables.	* Sort data according to two categories (e.g. *sort a set of data separately for females and males*). * Complete a given frequency table. * Calculate percentage values to represent the relative sizes of different categories of data.	* When given a raw set of data, sort the data, decide on appropriate intervals (if necessary), and construct a frequency table to organise the data. If necessary, use the frequency table to draw an appropriate graph to represent the data.	* Make a deduction about whether collected information is biased or valid based on the structure of instrument used to collect the data and the way in which the data was collected. * Explain with justification whether data is discrete or continuous. * Analyse data organised in tables and make deductions about trends in the data.
Measuring data/ Summarising data	* Identify the maximum and minimum values in a set of data. * Identify the mode for arranged data. * Identify the median for odd data that has already been arranged.	* Calculate mean and range. * Calculate the median for even data. * Calculate the median if the data is not arranged.	* Calculate the mean, median and modal average for a set of data and decide with reasons which average provides the most accurate representation of the data. * Use data presented on a graph to determine the mean, median, mode and range of a data set.	* Analyse measures of central tendency and make deductions about trends in the data. * Compare measures of central tendency calculated for two sets of data and use these measures to explain differences between the data sets.
Representing data	* Read values directly from the values provided on graphs.	* Draw a specified graph from a given table of data. * Estimate values from given graphs.	* Organise data using an appropriate table, decide on the most appropriate format for representing the data (that is, actual values or percentages), and decide on the most appropriate graph needed to represent the data.	* Analyse graphs and make deductions about trends in the data and predictions for the future. * Identify and describe the use and misuse of statistics and make justified recommendations.

TOPIC: FINANCE				
Section	**Level 1: Knowing**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Cost price and selling price	* Determine the cost price of an item by adding together given cost values for the component parts of the item. * Determine the income generated from the sale of an item based on a given sales price and given sales volumes.	* Compare the difference between the cost and selling price of an item by calculating the percentage mark-up in price of the selling price from the cost price. * Construct a table of values to show how the cost price of an item changes depending on the number of items made. * Draw a graph from a given table.	* Draw graphs, without scaffolding or guiding questions, to show the costs involved in producing an item and money generated from the sale of the item. * Investigate, through research, the various costs involved in manufacturing an item, and decide on an appropriate selling price for the item. * Calculate profit if only one of income or expenses is given and the other still needs to be calculated.	* Conduct market research on a group of people and use the results of the research to defend a particular selling price for a product. * Interpret graphs showing the cost of production and income generated from the production and sale of an item, and use the graphs to make decisions about the business (e.g. *how many items must be manufactured and sold to cover all production costs*).
Break-even analysis	* Define 'break-even' in the context in which a problem is posed (e.g. *in the context of a business, 'break-even' refers to the income that must be generated to cover all expenses*).	* Determine the break-even point of a business from a given table of income and expenditure values. * When given two graphs that intersect, read off the value of the independent and dependent variables at the breakeven point (point of intersection) of the graphs.	* Draw two graphs and identify the point of intersection of those two graphs in order to compare different options (e.g. *income vs. expenditure; cell phone contract options; electricity tariff system.*).	* Explain the relevance of the break-even point of two graphs in relation to the problem or context for which the graphs have been drawn. * Explain the meaning of different regions on a graph (that is, between different points of intersection) in relation to the problem or context for which graphs have been drawn. * Rework the answer if the initial conditions change.
Interest, bank loans and investments	* Define 'interest' and the 'interest rate'. * Identify interest rate values quoted on bank statements.	* Perform simple interest calculations manually (that is, without the use of a calculator) over multiple annual time periods. * Read values off graphs showing simple and compound investment scenarios. * Calculate compound interest compounded annually. * Increase or decrease a given amount by a certain percentage. * Investigate informal loans, hire purchase agreements and fixed deposit accounts. * Loan agreements between family members where repayments are made once at the end of the loan period.	* Perform compound interest calculations manually (that is, without the use of a formula) over multiple annual time periods. * Complete a table that models a loan scenario and include consideration of a monthly interest calculation, monthly repayment, and monthly amount outstanding on the loan. * Draw graphs from given tables of values to represent loan scenarios. * Calculate compound growth/decline * Determine bank charges for different accounts using given tables and formulae. * Investments in fixed deposit accounts where money is deposited and withdrawn once only	* Compare simple and compound interest graphically. * Compare bank charges of different banks using tariff tables, given formulae and drawn graphs to assess different accounts for individuals with particular needs. * Determine the real cost of a loan and the interest paid on a loan. * Investigate the total amount of money in an investment at the end of a certain time period. * Make sense of graphs showing loans and investment scenarios. * Investigate implications of late payment on credit cards.

		TOPIC: FINANCE		
Section	**Level 1: Knowing**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Inflation	* Define the term 'inflation'.	* Show by calculation how the price of an item might change if affected by inflation (that is, increasing a value by a percentage).	* Calculate compound growth/decline.	* Show by calculation how the price of an item might change if affected by inflation over multiple time periods * Use knowledge of inflation rates to argue and justify a particular salary * Rework the answer if the initial conditions change.
Taxation	* Write the acronyms "VAT" and "UIF" in full. * Define the terms Gross income, 'VAT inclusive", "VAT exclusive", etc.	* Work with "VAT" in the context of shop purchases, till slips and bills (Water, electricity and telephone). * Work with "UIF" in context of payslips	* Calculate the amount in "VAT inclusive" and "VAT exclusive" prices * Determine how a final price has been calculated by adding 15% "VAT" * Indicate how "UIF" is calculated as percentage of gross income	* Explain why "UIF" is deducted * Investigate how "UIF" has been calculated in the payslip * Analyse and show how values have been determined in payslips including "UIF"
Exchange rates	* 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.	* Perform currency conversion calculations, taking into account currency exchange fees charged by banks and other financial institutions. * Recognise the meaning of "strong" or "weak" currency	* Understand the "buying power" of a currency in a particular country

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Examination Guidelines

		TOPIC: MEASUREMENT		
Section	**Level 1: Knowing**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Conversions	* Convert between mm, cm, m and km. * Convert between g and kg. * Convert between ml and litres.	* Convert from °C to °F (and vice versa) using given formulae. * Convert between different systems using given conversion factors (e.g. *convert from m³ to litres using the fact that 1 m³ = 1 000 litres*).	* Convert between different systems using given conversion tables, where it is necessary to first identify and then use an appropriate conversion factor from the table.	* Compare solutions to a problem expressed in different units and make a decision about what unit is the most appropriate or useful for the particular context in which the problem is posed.
Measure length, weight, volume and temperature	* Measure accurately using appropriate measuring instruments (e.g. *ruler; tape measure; kitchen scale; jug*).	* Perform calculations involving measured values (e.g. *working out how much longer one piece of wood is than another piece*).	* Use measured values in conjunction with other content or skills to complete a larger project (e.g. *measure the dimensions of a bedroom to determine the running metres of carpet needed for the floor*). * Make adjustments to calculated values to accommodate measurement errors and inaccuracies due to rounding.	* Make decisions about the need for accuracy when performing a measurement in a particular context. * Interpret a measured value and make a decision based on the value (e.g. *measure the temperature of a child and decide if the child should be taken to hospital*).
Perimeter, area and volume	* Define terms (e.g. *'area', 'perimeter', 'volume', 'radius'*). * Identify from a list of given formulae which formulae relate to perimeter calculations, which relate to area calculations, etc. * Determine the radius of a circle from a given diameter. * Know that area is expressed in units² (e.g. cm²) and volume in units³ (e.g. cm³). * Know and use formulae for perimeter, area and volume.	* Calculate perimeter, area and volume by substituting given values into given formulae. * Describe relationships between input and output values in a table of data concerning space, shape and measurement.	* Perform preliminary calculations to determine dimensions required in perimeter/area/volume calculations and then calculate perimeter/area/volume (e.g. *when asked to determine the volume of concrete needed for the foundations of a house, interpret top view plans of the foundation trench of a house, use the plans to determine the dimensions of the trench, and then calculate the volume of the trench*).	* Use perimeter, area and/or volume calculations to complete a project, where it is not stated specifically what type of calculation is required (e.g. *when asked to determine the amount of paint needed to paint a building, first interpret plans to determine dimensions of the walls, then calculate the surface area of the walls, then use the paint conversion ratio on the back of the paint tin to determine the required number of litres of paint required*).
Time	* Read time values on a clock or watch. *Converting between seconds, minutes and hours	* Record time values and perform calculations with time.	* Interpret time values on a bus time table to determine departure, arrival and travelling times.	* Perform time calculations in conjunction with maps and other travel resources in order to plan a trip (e.g. *determine approximate travelling times, appropriate stopping points for refuelling, the time to start a journey in order to arrive at a destination at a particular time*).

	TOPIC: MAPS, PLANS AND OTHER REPRESENTATIONS OF THE PHYSICAL WORLD			
Section	**Level 1: Knowing**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Scale	• Explain the meaning of a given scale (e.g. *explain what the scale 1 :100 means in terms of the measurements on a plan and actual dimensions*).	• Use a given scale to determine actual measurements when given measured values, or measured values from given actual values.	• Use a given scale in conjunction with the measurement on a plan/map to determine length/dimensions. • Use a given scale in conjunction with other content or skills to complete a project (e.g. *use a given scale to determine the dimensions in which to draw a 2-dimensional plan/ 3 dimensional plan of an object, and then draw the plan*).	• Critique the scale in which an object has been drawn and offer an opinion as to a more appropriate scale. • Decide on an appropriate scale to which to draw a picture or build a model, and then complete the project.
Maps	• Identify the labels/names of national roads (e.g. N3) that must be travelled on to travel between two locations. • Identify the names of the towns on the route between two locations. • Identify the scale of a map.	• Identify the position of two locations on a map and use given distance values on the map to determine the travelling distance between the two locations. • Interpret a given set of directions and describe what location the directions lead to. • Provide a set of directions to travel between two locations in a town using street names. • Describe the position of an object in relation to surrounding objects. • Describe the position of a building in relation to other buildings.	• Use a map in conjunction with a distance chart to determine the shortest route to travel between two locations. • Identify a possible route between two locations on a map, measure the distance between the locations, and use a given scale to estimate the distance between the two locations. • Estimate travelling times between two or more locations based on estimated travelling speed and known or calculated distances.	• Critique a proposed travel route in relation to distance, estimated travelling times, etc. and suggest and justify possible alternative routes. • Use maps in conjunction with other travel resources (e.g. *exchange rate information; distance chart; bus timetable*) and financial information (e.g. *fare tables; petrol price*) to plan and cost a trip). • Make decisions regarding appropriate stopping points during a journey based on considerations of fatigue, petrol consumption travelling time, etc.
Plans	• Identify the scale of a plan. • Define terms (e.g. *floor plan; elevation plan; layout plan; etc.*). • Read off the value(s) of given dimensions on the plan (e.g. *the length of the wall is 4* m).	• Use a given key to identify the number of windows/doors/rooms shown on a plan for a building. • Identify on which plan a particular structure is shown (e.g. *the door is shown on the North elevation plan*).	• Measure dimensions on a plan and use a given scale to determine actual dimensions. • Use plans in conjunction with other content, skills or applications to complete a project (e.g. *interpret plans to determine the dimensions of a room in order to establish the amount of carpet needed for the floor of the room*).	• Describe an item represented in a plan. • Critique the design of a structure shown on a plan. • Decide on an appropriate scale in which to draw a plan and then draw the plan. • Make connections between plans showing different views of the same structure (e.g. *explain which wall shown on a floor plan is represented on a particular side view plan*).

	TOPIC: MAPS, PLANS AND OTHER REPRESENTATIONS OF THE PHYSICAL WORLD			
Section	**Level 1: Know...**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Models	* Measure the dimensions of a structure for which a model or 2D drawing will be constructed.	* Build a model using a given table of dimensions or a given net/cut-out.	* Use instructions to assemble diagrams, containing words and /or pictures found in manuals * Use a given scale to determine the dimensions in which to build a model or make a 2D drawing, and complete the project. * Build a model and use the model in conjunction with other content, skills or applications to solve a problem (e.g. *build a model of a container and use the model to investigate different types of packaging arrangements; or build a model of a container and determine the surface area and volume of the model to investigate the amount of storage space available in the container*). * Estimate the quantity of material needed using perimeter, area and volume calculations.	* Decide on an appropriate scale in which to build a model or make a 2D drawing, use the scale to determine dimensions, and complete the project. * Construct and compare two models in terms of storage space and materials used and make a decision about which model will the better choice for packaging an item. * Analyse a model and critique the layout of the structure shown in the model. * Investigate the best packaging shape to use for packaging a particular product. * Investigate the best packaging shape to use for irregular objects while minimising the wasted space and cost * Investigate the number of furniture that can fit in a venue

	TOPIC: DATA HANDLING			
Section	Level 1: Knowledge	Level 2: Applying routine procedures in familiar contexts	Level 3: Applying multi-step procedures in a variety of contexts	Level 4: Reasoning and reflecting
Developing questions and collecting data	* Read information directly from a given questionnaire/survey (e.g. *the name of the organisation for which the questionnaire is being conducted*). * Complete a given questionnaire.	* Conduct a given questionnaire/survey with a group of people.	* Decide on appropriate questions to include on a questionnaire/survey, construct and then conduct the questionnaire/survey.	* Critique the questions/layout of a questionnaire/survey.
Classifying and organising data	* Sort data from smallest to biggest. * Count the number of values in a data set. * State the difference between categorical data and numerical data; discrete and continuous data. * Read information from frequency tables.	* Sort data according to two categories (e.g. *sort a set of data separately for females and males*). * Complete a given frequency table. * Calculate percentage values to represent the relative sizes of different categories of data.	* When given a raw set of data, sort the data, decide on appropriate intervals (if necessary), and construct a frequency table to organise the data. If necessary, use the frequency table to draw an appropriate graph to represent the data.	* Make a deduction about whether collected information is biased or valid based on the structure of instrument used to collect the data and the way in which the data was collected. * Explain with justification whether data is discrete or continuous. * Analyse data organised in tables and make deductions about trends in the data.
Measuring data/ Summarising data	* Identify the maximum and minimum values in a set of data. * Identify the mode for arranged data. * Identify the median for odd data that has already been arranged.	* Calculate mean and range. * Calculate the median for even data. * Calculate the median if the data is not arranged.	* Calculate the mean, median and modal average for a set of data and decide with reasons which average provides the most accurate representation of the data. * Use data presented on a graph to determine the mean, median, mode and range of a data set.	* Analyse measures of central tendency and make deductions about trends in the data. * Compare measures of central tendency calculated for two sets of data and use these measures to explain differences between the data sets.
Representing data	* Read values directly from the values provided on graphs.	* Draw a specified graph from a given table of data. * Estimate values from given graphs.	* Organise data using an appropriate table, decide on the most appropriate format for representing the data (that is, actual values or percentages), and decide on the most appropriate graph needed to represent the data.	* Analyse graphs and make deductions about trends in the data and predictions for the future. * Identify and describe the use and misuse of statistics and make justified recommendations.

	TOPIC: PROBABILITY			
Section	**Level 1: Knowing**	**Level 2: Applying routine procedures in familiar contexts**	**Level 3: Applying multi-step procedures in a variety of contexts**	**Level 4: Reasoning and reflecting**
Expressions of probability/ Prediction/Evaluate expressions of probability	* Identify the percentage chance of rain for a particular town from a weather report in a newspaper. * State the meaning of terms associated with probability (e.g. *event; outcome*).	* Express the probability of an event using fraction, percentage and decimal notation. * Identify all of the possible outcomes of a particular event (e.g. *rolling a dice; gambling game).*	* Conduct an experiment to compare the experimental probability of an event to its theoretical probability. * Identify appropriate values from a given table of data values (e.g. *on motor vehicle fatalities in South Africa*) and express the probability of certain events shown in the table. * Develop a game involving probability and play the game with another learner in the class. * Design simple contingency tables and use them to calculate probabilities. * Draw tree diagrams and use them to calculate probabilities	* Analyse a table of rainfall data for a town and make predictions about the chance of rain in that town during a particular month during the year. * Critique the use of references to probability values in newspaper articles. * Analyse a game involving probability and make a deduction about the fairness of the game.

Measurement

- Calculate/measure the perimeter, area (including surface area) and/or volume of objects by direct measurement (perimeter using rulers, etc.; area using grids, etc.; and volume using measuring jugs, etc.)

- Calculation for each of the following, rectangles, triangles and circles (quarter, semi and three-quarters) using known formulae.

QUESTION 1

1.1 Likhona is planning a road trip and a camping adventure with her friends. They will be traveling to a national park, where they will be hiking, camping, and exploring nature. The distance from Likhona's home to the national park is 960 000 metres. They will depart from Likhona's home at **7:00 a.m.** and plan to arrive at the national park by **4:00 p.m.**

[Source:www.freepik.com]

Use the information above to answer the questions that follow

   1.1.1 Convert the distance they travelled from Likhona's home to the national park to kilometres. (2)

   1.1.2 Likhona and her friends would stop three times during the trip to take 20 minute breaks. They claimed that their average speed was 120km/h

   Verify, with calculations, whether their statement is CORRECT.

   You may use the formula: $\textbf{Speed} = \frac{\textbf{Distance}}{\textbf{Time}}$

   (4)

1.2 They plan to pack a cooler for the trip. The cooler weighs 6 500 grams with dimensions 50cm by 30cm by 40cm.

1.2.1   Suggest one reason why they would pack a cooler.   (2)

1.2.2   If the cooler needs to be shipped back after the trip, calculate the shipping cost if
          the company charges \$4 per kilogram   (3)

1.2.3   Calculate the volume of the cooler in cm³.
          You may use the formula : **Volume = l × w × h**   (2)

1.2.4   Likhona plans to fill the cooler with water. Determine how many litres of water the
          cooler can hold.   (2)
          Note **1m³ = 1000L**

1.2.5   The campsite provides 20 litres of water per person per day. Calculate the total
          amount of water needed for a group of 5 people over 3 days.   (3)

1.2.6   The campsite has a cylindrical water tank with a radius of 3 metres and a height of
.   4 metres. If the tank is currently half full, Determine the volume of water in the
          tank in litres. NOTE: $1m^3 = 1000l$
          You may use the formula: **Volume = 3,142 ×r² ×h**   (6)

1.3   At the campsite, the daytime temperature is 27°C. In the evening, the temperature drops to 15°C.
.

1.3.1   Calculate the difference between the daytime temperature and the evening
          temperature.   (2)

1.3.2   Convert the evening temperature to Fahrenheit**.**

          You may use the formula: **°F = (1,8 × °C) + 32**   (2)

1.3.3   The weather forecast predicts that the temperature will rise to 95˚F the next day. If
          the temperature increases by 10 ˚C by midday, Calculate the temperature in
          Celsius.
          You may use the formula: **°F = (1,8 × °C) + 32**   (6)

1.4   Likhona is setting up a rectangular camp. The dimensions are 12 meters by 6 meters.

1.4.1   Define the term *perimeter*, according to the given context.   (2)

1.4.2   Calculate the area of the campsite.   (2)

1.4.3   Likhona decided to leave a path of 2 meters wide around the edge of the campsite.
          Calculate the area of the inner camping space.   (3)
1.4.4   The campsite has a round fire pit in the centre with a diameter of 1metre.
          Decorative stones will be placed around the fire pit. Each stone covers

0,5 m². Calculate the number of stones needed to cover the entire area of the fire pit.

You may use the formula: **Area = 3,142 × radius ²**   (5)

1.5   Likhona and her friends will begin a hike at 5pm and they are expected to finish at 6:30 pm.

   1.5.1   Write 6:30pm in 24 hour format.   (2)

   1.5.2   If the hike takes 45 minutes longer than expected, at what time will they finish the hike?   (2)

QUESTION 2

> Likhona is designing a **herb garden** with different sections, each containing a variety of herbs. The garden has a **rectangular main section** with smaller **circular and triangular planting beds** inside it. There is also a **water tank** for irrigation, and temperature changes affect the plant growth.
>
>
>
> [Source:www.freepik.com]
>
> **Area of a cycle $= \pi \times r^2$ Volume of a cylinder$= 3,142 \times r^2 \times h$**
>
> **Area of a rectangle $= l \times b$**
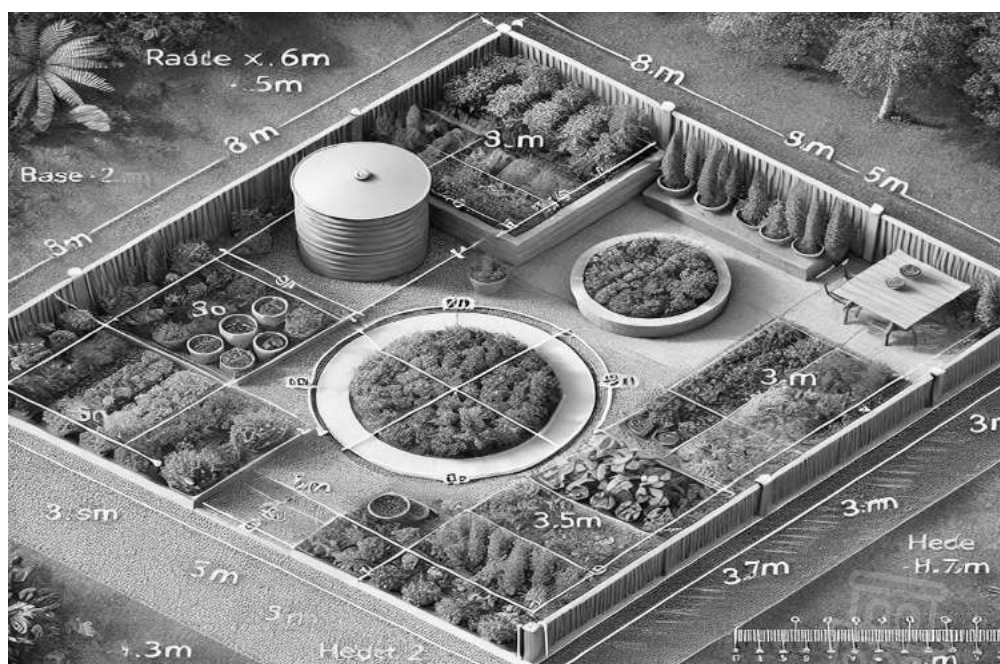
2.   Use the above information to answer the questions that follow.

2.1   State the shape of the water tank.   (2)

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2.2 A triangular section in the garden has a **base of 3 m** and a **height of 200 cm**. Calculate the (3)
     area of a triangular section.

     You may use the following formula

     Area of a Triangle$= \frac{1}{2} \times base \times Perpendicular\ Height$

2.3 Inside the main garden, there is a **circular herb bed** with a radius of **1.5m**. Calculate the (2)
     area of this circular section.

2.4 The **circular herb bed** has a **depth of 0.5m**. Calculate the **volume of soil** needed for this (2)
     bed.

2.5 Likhona wanted to add another circular planting section with twice the radius of the
     current circular bed.

     Calculate how much extra soil would be needed if this section also had a **depth of 0.5m**? (3)

2.6 The main herb garden is a rectangular plot measuring 8m × 6m. Likhona stated that the
     herb garden would need a fence of 28m long.

     Verify by means of calculations whether her statement is correct. (3)

2.7 Determine the total planting area. (4)

2.8 The garden has a cylindrical water tank with a diameter of 2m and a volume of 9.43m³.
     Calculate the Height of the tank in meters (m). (4)

     You may use the formula **Volume $= \pi \times r^2 \times h$**

Financial Documents

Work with the following financial documents:

• documents relating to personal and/or household finance, including:

- household bills (e.g. electricity, water, telephone, cell phone)

- shopping documents (e.g. till slips, account statements)

- banking documents (e.g. bank statements and fee structures)

- household budgets

In order to understand terminology used in documents

QUESTION 3

3.

Thabiso has R8 000, he wants to buy a second-hand motor bike which cost R15 000. He will use the bike for checkers sixty-sixty. He decided to take a loan to purchase the bike.

TABLE 1 below shows the personal loan repayment plan.

TABLE 1: PERSONAL LOAN REPAYMENT

Loan Amount	Monthly payment for different periods with interest rate of 9,75% p.a.					
	6 Months	**12 Months**	**24 Months**	**36 Months**	**48 Months**	**60 Months**
R10 000	R2 017,83	R10 67,07	R592,24	R434,47	R355,95	R309,13
R20 000	R3 746,15	R1 952,20	R1 056,28	R758,58	R610,43	R522,09
R30 000	R5 474,46	R10 000	R1 520,32	R1 062,69	R864,90	R735,05

Adapted from [Source: www.nedbank.co.za/loans**]**

NOTE:

- Initial fee of R1 207,50*
- Monthly administration at R69
- Note monthly repayments exclude the administration fees.
- *Symbol indicate VAT inclusive of 15%

Use the information above to answer the following questions

3.1	State the difference between interest and interest rate.	(2)
3.2	Determine the interest rate for six months.	(2)
3.3	Advise Thabiso on which amount to take as his loan based on his needs provide reason for your answer.	(3)
3.4	Calculate the annual administration.	(2)
3.5	Calculate VAT amount charged on the initial fee.	(3)

3.6   Calculate the total amount that will be paid back if the person took R20 000 for 5 years.

The following formula may be used: (5)

Total cost= monthly administration +Monthly repayment × periods in months + initial fee.

3.7   Write the monthly repayment to the nearest hundred, if the person took R30 000 that will be paid back half yearly.   (2)

3.8   Aphiwe told Thabiso that, if he can invest the money he has, he could manage to get enough money for the Motor bike within the period of 5 years in a simple interest option that offers 12,98% p.a.

Verify showing all calculations whether Aphiwe's claim is valid or not.   (5)

3.9   Thabiso is considering investing R8 000 @ an interest rate of 12,98%p.a. for 5 years in a compound option compounded annually.

NOTE: R10 211,58 is an amount that he will be having after 2 years of investment.

Determine how much he will have after 5 years.   (4)

Banking, loans and investments (banking)
Investigate the following types of bank accounts:
• savings account
• cheque/current account
• fixed deposit account
• credit account (with a credit card) and a debit account (with a debit card).
In order to:
Compare bank charges of different banks using tariff tables, given formulae and drawn graphs to assess the suitability of different accounts for individuals
with particular needs.
Investigate the advantages and disadvantages of the different types of accounts regarding access to money, bank charges and interest rates.
Investigate the implications of late payments on a credit card account.

Investigate the different ways in which interest is calculated on different types of accounts

(e.g. *Interest on a savings account is calculated daily but compounded monthly; on a fixed deposit account simple interest is calculated during the month*

but is compounded only at the end of the month).

4 **Question 4**

> Bank account holders are allowed to request for the bank statement for weekly, monthly, six months period, etc. TSD Bank Plus Current Account Statement for the period 09/09/2024 to 16/10/2024 is shown in **ANNEXURE A.**

Use the information above and **ANNEXURE A** below to answer the following questions

4.1	State why the account number has same details omitted.	(2)
4.2	Determine the number of days covered by the bank statement.	(3)
4.3	Explain the term *debit* in the given context.	(2)
4.4	Determine the missing values **A** and **B** in the bank statement.	(4)
4.5	Calculate the cost of the pre-paid electricity fee excluding VAT, rounded off to two decimal places.	(4)
4.6	Define the term *balance brought forward* in the context.	(2)
4.7	Miss Makhohliso claims that the difference between the total debits and the total credits is greater than R5 000. Verify if her claim is correct.	(4)
4.8	Round off the STD bank bond amount to the nearest thousand.	(2)

ANNEXURE A SHOWING MISS MAKHOHLISO'S BANK STATEMENT

TSD Plus Current Account Statement				
TSD Bank Cornerstone Building		STATEMENT **From: 09/09/2024**		
Gauteng 2107		**To: 16/10/2024**		
		Miss Makhohliso		
		1145 Leslie Street		
		Vereeniging 1930		
		Account Number: 47 962 *****		

Details	Debit (R)	Credit (R)	Date	Balance (R)
Balance Brought Forward				54,31
IB Payment to Tuff Lady	20,00		09/09/2024	34,31
Purchase	63,98		13/09/2024	**A**
Salary 9282		382,14	14/09/2024	352,47
Salary 9004		**B**	15/09/2024	23 048,45
Salary 9234		191,07	15/09/2024	23 239,52
IB Transfer to Teboho	2 400,00		15/09/2024	20 839,52
IB Payment to Mike	1 000,00		15/09/2024	19 839,52
IB Payment to Ntsiki	600,00		15/09/2024	19 239,52
Credit Card	2 361,52		15/09/2024	16 878,00
Insurance 9847	500,00		15/09/2024	16 378,00
Insurance 9140	532,75		15/09/2024	15 845,25
STD Bank Bond	5 569,75		15/09/2024	10 275,50
Insurance 9303	801,23		15/09/2024	9 474,27
Pre-Paid Electricity	100,00		16/10/2024	9 374,27
Vehicle repayment	3 168,79		16/10/2024	6 205,48
##Pre-Paid Electricity Fee	…		16/10/2024	6 204,38
Ladies Fitness	289,00		16/10/2024	5 915,38

NB: Transaction means any debits or credits on the account.

IB > Internet Banking Transactions

These fees are inclusive of VAT at 15%

[Adapted from www: banks SÁ; com]

Taxation - VAT and UIF

Develop an understanding of the difference between a "VAT inclusive" value and a value "excluding VAT".

Investigate through calculation how a final price has been determined by adding 15% VAT to a price excluding VAT.

Investigate through calculation the amount of VAT that has been added to a "VAT inclusive" price.

Develop an understanding of why UIF is deducted, the benefits to the employee and the responsibility of the employer.

Investigate through calculation how UIF values are calculated as a percentage of gross income.

QUESTION 5

5.1   Below is a list of items sold at Jumbo cash and carry.

TABLE 1: ITEM LIST SOLD AT JUMBO CASH AND CARRY

10KG RICE	OROS JUICE	Pepsi	AIR FRYER

		e	
R175,00	**R82,61 VAT excl.**	**R169,56 VAT excl.**	**R1 299 VAT incl.**

[Adapted_from_www.google.com/shopping]

NOTE: VAT charged at 15% from 1 April 2018 to 30 April 2025.
      : The rate increases to 15.5% from 1 May 2025 and to 16% from 1 April 2026
      : Assume all prices remain the same for the years 2025 and 2026.

Use the information above to answer the following questions.

5.1.1   Write down the abbreviation of VAT in full.   (2)

5.1.2   Explain what is meant by VAT exclusive price.   (2)

5.1.3   Identify the item sold at Jumbo Cash and Carry from the list of Zero-rated items.   (2)

5.1.4   Calculate the amount of VAT added to the price Air fryer.   (3)

5.1.5   Determine the price of Pepsi drinks on the 30th of June 2025.   (2)

5.1.6   Nomsa calculated the price of the Oros Juice for April 2026 as follows

Price in 2026 April = R82,61 ×115%
                    =R95,00×115,5%
                    =R109,73×116%
                    =R127,2830097
                    =R127,28

Identify the error in her calculation and determine the correct price of the Oros Juice in April 2026. (4)

5.2   Tash worked at Jumbo Cash and Carry as a cashier for more than 4 years. He lost his job just after the COVID-19 pandemic. He claimed from the UIF because he contributed to this fund for more than 4 years while he was working.

Tash earned a salary of R7 440 per month while he was working.
UIF is paid by both employee and employer at 1% of employees gross salary to the UIF fund.

- **Maximum Contribution:**

  The maximum UIF contribution that can be deducted from an employee's salary is R177.12 per month (1% of R17 712).

  Workers who earn more than the annual, monthly, or weekly maximum earnings ceiling must also contribute to the Fund, but their contributions are worked out on the maximum earnings ceiling.

  [source: https://labourguide.co.za/]

Use the information above and answer the questions that follow.

5.2.1   Determine the annual maximum UIF contribution by any employee. (2)

5.2.2   Write down the UIF monthly contribution of the worker that earns R25 000 per month. (2)

5.2.3   Calculate Tash's total monthly UIF contribution to Fund. (3)

5.2.4   Determine Tash's average daily income.
        You may use the following formula:

        Employees' average daily salary = Average salary ×12
        **   365** (2)

5.2.5   The Fund calculates employees' INDIVIDUAL REPLACEMENT RATE (IRR) using the following formula:
        IRR (%) = 29.2 + [7173,92 ÷ (232,92+ Average daily income)]

        Calculate Tash's unemployment benefit rate. (3)

5.2.6   Give ONE benefit of contributing to the UIF fund. (2)

Exchange rate

Work with exchange rates presented in foreign exchange tables found in newspapers for different currencies.

In order to:

Estimate+ the value of a currency in relation to other currencies.

Recognise the meaning of the terms "strong" and "weak" with regard to the relationship between different currencies.

Develop an understanding of the "buying power" of a currency in a particular country (that is, the value of the currency in relation to the cost of living in that

country).

QUESTION 6

6.1 | The information about the cost of oil and the exchange rate between 2022 and 2025 is given below.

Year	Oil price per barrel (USD)	EXCHANGE RATE (RAND PER USD)
2022	100,93	15,05
2023	82,49	18,22
2024	80,53	18,57
2025*	79,28	18,31

Data as of 14 March 2025   [source: https://wise.com/gb/currency]

NOTE: A "barrel of oil" refers to a standard unit of measurement for crude oil

Study the information above and answer the questions that follow.

6.1.1   Determine the difference in rand per dollar between 2022 and 2024.   (2)

6.1.2   Calculate how much 1ZAR will cost in USD during 2023.   (2)

6.1.3   Give a valid reason why 2025 has an asterisk (*) compared to other years.   (2)

6.1.4   Calculate the 2022 price per barrel of oil in Rand.   (3)

6.1.5   Determine how much in rand did 20 000 barrels of oil would cost in 2024.   (4)

6.1.6   Calculate the number of barrels of oil that could be purchased for R8 million in 2025.   (4)

6.2   The picture below shows what is in a barrel of oil in percentage distribution in 2025.

[source: https://www.reddit.com/]
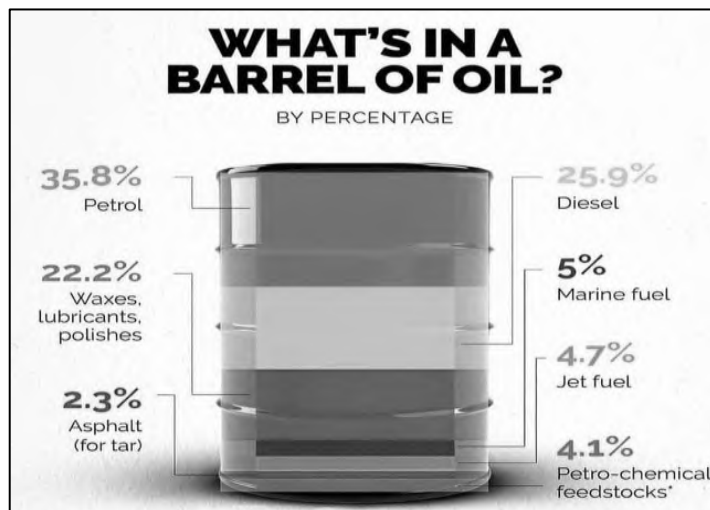
Each barrel of Brent crude oil contains approximately 42 gallons and costs $79,28

Use the picture above to answer the questions that follow.

6.2.1   Determine the cost of Brent crude oil in USD per gallon in 2025.   (2)

6.2.2   Calculate the cost of 42 gallons in rands if the exchange rate is **$1 = R18,31**.   (2)

6.2.3   Write down the simplest ratio of Jet fuel to petrol percentage.   (2)

6.2.4   Calculate how many gallons of Brent crude oil are spent on marine fuel per barrel.   (2)

6.2.5   Consider the following exchange of: 1 United Arab Emirates Dirham = 9,17 Thai Baht.

         Which currency is stronger between Thailand's currency and the United Arab Emirates'
         currency, Explain your answer.   (3)

INTEREST (LOANS; INVESTMENTS & BANK ACCOUNTS)

Perform calculations involving simple and compound interest through manual calculations and without the use of formulae*.

Represent simple interest growth scenarios using linear graphs and compound interest growth scenarios using graphs showing compound change.

In order to

Investigate the following scenarios:

• loan agreements between family members where repayments are made only once at the end of the loan

• investments in fixed deposit accounts where the money is deposited and withdrawn from the account only once

• bank accounts with a changing balance

QUESTION 7

7.1 | Nomalanga intends to change her current bank account. She visited two banks in the mall to have some clarity on their banking fees.

ANNEXURE A shows the comparison of the two South African bank service fee structures for Standard Bank and Absa Bank in 2023/24.

PICTURE OF THE TWO BANKS BRANCH ATM

[source: https://www.iol.co.za/business-report/economy/]

Use ANNEXURE A to answer the following questions.

7.1.1   Identify the bank that has increased its service fees on ATM deposits for R500 transactions. (2)

7.1.2   Explain what is meant by *internal debit order* in the given context. (2)

7.1.3   Show by calculation how the bank charges of R10,50 were calculated for a withdrawal(other) of R500 during 2024. (3)

7.1.4   Identify the type of transaction that has increased by the same percentage from the two banks. (2)

7.1.5   Show by calculations how the percentage change of 250% was calculated.   (3)

7.1.6   Name ONE type of transaction from ABSA Bank that showed the decrease from 2023 fees to 2024 fees.   (2)

7.1.7   Nomalanga had the following transactions in one of the months from her current bank.

- R3500 withdrawal (native)
- R800 deposit at ATM
- Two external debit orders.

Use the transaction above to determine with calculations which bank will be most cost effective for her.   (7)

7.2   Mr Toronto is worried by the high cost of water bill in his household. He decides to use his cell phone app to monitor water consumption for his household. The table below shows the information recorded from his cell phone.

TABLE 3: SHOWING INFORMATION FROM THE CELLPHONE APP

CALCULATING YOUR WATER USAGE IN LITRES		
Previous meter reading.	28 100	
Current meter reading.	58 890	
Consumption reading	……..	
Days between reading.	A	
No. of people at residence.	6	
Average used per person per day.	B	

[source: https://www.sdrc.qld.gov.au/payments]

NOTE: Mr Toronto recorded the information in month of June.

Use TABLE 3 above to answer the following questions.

7.2.1   Determine the value of **A**, the number of days between readings.   (2)

7.2.2   Calculate the value of **B**, the average number of litres used per person per day.   (4)

7.2.3   Suggest TWO possible ways Mr Toronto's family could use to reduce the water bill.   (4)

ANNEXURE A

QUESTION 7.1

TABLE 1: ABSA BANK SERVICE FEES FOR 2023/24

Absa Transact Account	2023 Fees	R500 transaction	2024 Fees	R500 transaction	% Change
Withdrawal (Native)	R10.00/R1000	R10.00	R10.00 / R1000	R9.50	–
Withdrawal (Saswitch)	R10.00+R2.50/R100	R22.50	R10.00+R2.50/R100	R22.50	–
Withdrawal (POS)	Free		Free		–
Deposits (ATM)	R2.50/R100	R12.50	R2.50 / R100	R12.50	–
Debit orders (Internal)	Free		Free		–
Debit orders (external)	R1.00		R3.50		+250%
Account fee (PAYT)	R4.90		R5.50		+12.2%

TABLE 2: STANDARD BANK SERVICE FEES FOR 2023/24

Standard Bank MyMo Account	2023 Fees	R500 transaction	2024 Fees	R500 transaction	% Change
Withdrawal (Native)	R8.00/R1000	R8.00	R9.00/ R1000	R9.00	+12.5%
Withdrawal (Other)	R10.00/R1000	R10.00	R10.50 / R1000	R10.50	+5%
Withdrawal (POS)	R1.40	R1.40	R1.40	R1.40	–
Deposits (ATM)	R1.20/R100	R6.00	R1.40/ R100	R7.00	+16.6%
Debit orders	R3.50		R3.50		–
Account fee (PAYT)	R5.95		R6.95		+12.2%

[Source: https://businesstech.co.za/news/banking/]

Tariffs

Work with the following tariff systems:

• municipal tariffs (e.g. *electricity; water; sewage*)

• telephone tariffs (e.g. *cell phone and fixed line*)

• transport tariffs (e.g. *bus, taxi and train tariffs*)

• bank fees.

In order to:

Calculate costs using given tariffs and/or formulae.

Draw and interpret graphs of various tariffs systems.

Compare two (Grade 11) or more tariff system to determine the most appropriate option for individuals with particular needs (e.g. *comparing pre-paid versus contract cell phone costs*) by:

• performing calculations

QUESTION 8

8.1 Table 4 below shows the property rates for the financial years 2024/2025 and 2025/2026. Some information has been omitted.

TABLE 4: PROPERTY RATES 2024/2025 AND 2025/2026

Category of property	2024/2025 in Rands	2025/2026 in Rands
Agricultural	0,3443	0,3705
Business & commercial	3,4820	3,7467
Outside Urban Development Line	2,2642	2,4363
Industrial	4,4933	4,8348
Public service infrastructure (PSI)	0,3443	0,3705
Residential	1,3773	1,4820
Adapted from https: www.capetown,gov,za		

Use TABLE 4 above to answer the questions that follow.

8.1.1. Identify the category that has the second-largest charge in the financial year 2024/2025. (2)

8.1.2. Round off to the nearest rand the property rate tariff for 2025/2026 for industrial. (2)

8.1.3. Determine the difference of charges in the industrial category and residential category for the year 2025/2026. (2)

8.1.4.   Azande stated that the percentage increase in the residential category for 2024/20265 and 2025/2026 is above 7%.
Verify whether her statement is CORRECT.

You may use the following formula:
Percentage increase = <u>Tariff in 2025/2026 – Tariff in 2024/2025</u> × 100%
<div align="center">**Tariff in 2024/2025**</div>   (4)

8.2.

TABLE 4 below indicates the electricity tariff structure from Cape Town municipality. The municipality subsidizes household 60 kWh free units of electricity per month if the average consumption is below 250kWh per month and 25 kWh free units for a consumption between 250kWh and 450 kWh per month.

TABLE 4: CAPE TOWN ELECTRICITY STRUCTURE

Tariff Structure	Units in R/kWh (VAT inclusive)	Units in R/kWh (VAT inclusive)	Network charge(R)
	Block :1 (0 - 600)	Block: 2(>600)	
Domestic	3.91	4.75	-
Home User	3.44	4.75	R281.78
[source:<u>www.capetown.gov.za/electricity-tariff</u>]			
NOTE: The network charge is compulsory to all connected electricity users from Cape Town Municipality.			

Use TABLE 4 and the information above to answer the questions that follow.

8.2.1.   Define the term *tariff* in this context   (2)

8.2.2.   Determine after how many kWh the tariff will be the same for both Domestic and Home,   (2)

8.2.3.   Calculate the tariff excluding VAT in block 1 for the domestic tariff structure.   (3)

8.2.4.   The family used 638.56 kWh under the Home User tariff structure. Calculate the cost, including VAT, that the family will pay for the electricity used.   (5)

8.2.5.   The municipality manager claims that the difference between Domestic and Home User on the usage of 300 kWh will be R152,53. Verify with calculation if the statement is VALID.   (3)

QUESTION 9

9.1. Sandile is a musician from Durban. He wanted to travel to Pietermaritzburg with his band of four other musicians to take part in a concert there. The band investigated three affordable and efficient ways to travel from Durban to Pietermaritzburg.

TABLE 1: PICK UP AND DROP-OFF POINTS FOR THE INTERCITY LINER

Experience Full Luxury Bus Travel with Intercity Xpress	**Pick-Up** DURBAN (BEACH FRONT) 2025-03-14 @ 08:25:00 85 O R Tambo Parade Formerly Known As Marine Parade (Opposite Tropicana Hotel) **Drop-Off** PIETERMARITZBURG 2025-03-14 @ 09:55:00 Mc Donalds Centre, 272 Burger St, Pietermaritzburg

TABLE 2: INTERCITY EXPRESS - FRIDAY 14/03/2025 DURBAN STATION TO PIETERMARITZBURG

BUS NO.	TIME OF DEPARTURE	TIME OF ARRIVAL	COST (IN RAND)
7053	7:45	9:20	230
7007	8:20	9:35	230
7003	9:00	10:15	315
7055	20:10	21:40	300
7023	21:30	22:30	350
Source: Adapted from www.intercity.co.za			

Study the bus transport tariffs above and answer the questions.

9.1.1   Define the term transport tariff in context.   (2)

9.1.2   State the departure time and arrival time for the earliest travel option shown in TABLE 2.   (2)

9.1.3   Determine the range of cost for the Intercity Liner shown in TABLE 2.   (3)

9.1.4   Show by calculations the bus that will take the longest time to arrive at Pietermaritzburg.   (7)

9.1.5   The distance from Durban to Pietermaritzburg is approximately 80km. Calculate the cost per kilometre using the cheapest option shown in the table.   (3)

9.1.6   Give two possible reasons for the different costs to travel the same distance.   (4)

9.2   Sandile and his band of musicians investigated the cost to travel from Durban to Pietermaritzburg by using the Uber. The table below shows the Uber transport tariffs.

TABLE 3: QUOTATION FOR UBER PRICE FROM DURBAN TO PIETERMARITZBURG ON 14 MARCH 2025

Comfort ▲3
ZAR 1,580.00
Newer cars with extra legroom

UberX ▲3
ZAR 880.00
Affordable, everyday rides

UberXL ▲6
ZAR 1,247.00
Affordable rides for groups up to 6

Use the information above to answer the following questions.

9.2.1   Sandile and his five friends prefer to travel together on the Uber. Identify the size of the Uber that will suit their needs.   (2)

9.2.2   Using the Option you selected in Q9.2.1, calculate the cost per person for a single trip to Pietermaritzburg.   (3)

9.3   Table 4 below shows the cost per person if Sandile and his band choose the Uber XL option.

TABLE 4: TRANSPORT COST PER PERSON USING THE UBER XL ON 14 MARCH

NO. OF PEOPLE	1	2	**A**	4	5	6
COST PER PERSON (IN RANDS)	1 247	623,50	415,67	**B**	249,40	207,83

Study the table and answer the questions.

9.3.1   Write a formula to calculate the transport cost per person, shown in Table 4.   (2)

      Begin the formula : Cost per person = _____

9.3.2   Use the formula to complete the values for A and B in the table.   (4)

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9.3.3 State the type of relationship between the variables shown in Table 4. Explain the relationship . (3)

Finance and Investment

Investigate the following types of bank accounts, savings account, cheque/current account, fixed deposit account, credit account (with a credit card) and a debit account (with a debit card).

In order to interpret banking documents (e.g. bank statements and fees brochures) and understand the terminology in the documents:

QUESTION 10

10.1. Mrs Jones owns a cleaning company. She has ten cleaning staff and two administrative staff members working for the company. In 2025 each cleaning staff member earns a weekly income of R2 500 and each administrative staff member earns a monthly income of R12 000. Mrs Jones is currently banking with Capitec Bank. She is concerned that her transaction fees may be higher than transaction fees at other banks. She investigated the banking fees at Standard Bank. Shown below are the transaction fees for both banks. Study the information on the banking fees and answer the questions.

TABLE 1:	**TABLE 2:**
CAPITEC FEES FOR BUSINESS BANKING	**STANDARD BANK TRANSACTION FEES**

2025 fees:

- Monthly fee **R50**
- Capitec to Capitec payment **R1**
- Payment to other banks **R2**
- Debit order **R3**
- Immediate payment to any other bank **R6**
- Cash withdrawals (per R1 000) at any bank's ATM in SA **R10**

Maintain a minimum balance of R150 to keep your business banking account active.

Valid from 1 March 2025.

Source: www.capitecbank.co.za

STANDARD BANK BUNDLED ACCESS ACCOUNT GIVES YOU THE FOLLOWING

Free	❖ Balance enquirers an the Mobile App
	❖ ATM, cellphone and internet banking
R53 per month bundle	❖ Unlimited free electronic inter-account transfers
	❖ Unlimited free electronic account payments
	❖ Unlimited free debit orders
	❖ Unlimited free stop orders
	❖ Free send money
	❖ Free Standard Bank ATM cash withdrawals up to R2 000 per month. Thereafter R2,60 per R100 or part thereof
	❖ Free Standard Bank ATM cash deposits up to R2 000 per month

Source: www.standardbank.co.za

Use the above information and answer the following questions

10.1. Every month Mrs Jones pays for five monthly debit orders.

10.1.2 Explain the term *debit order*.   (2)

10.1.3 Calculate the total monthly cost for the debit orders through Capitec Bank   (3)
        including the fixed monthly fee.

10.1.4 Determine the cost of the five debit orders using a Standard Bank Access Account (2)
        with a R53 bundle.

10.2. Mrs Jones uses EFT to pay her staff salaries and wages. She pays transaction fees on all
       salaries and wages. February has four weeks. One admin staff member and one cleaning
       staff member have a Capitec Bank account. The other staff members bank with other
       banks.

       The above information to answer the following questions.

10.2.1 State what the acronym **EFT** stands for.   (2)

10.2.2 Calculate the total amount that Mrs Jones paid for salaries and wages in a four   (6)
        week month in 2025.

10.2.3 Standard Bank told Mrs Jones that she will save on transaction fees if she uses the (5)
        R53 Access Bundle Account. Use the stop orders and the salary/wages payments
        to verify if Standard Bank is correct.

10.2.4 Mrs Jones withdraws R4 500 a month from the business account to pay for
        miscellaneous items and for emergencies. Compare the amount that she will pay
        in banking fees for withdrawing the amount from each bank and state which bank
        is more expensive.   (7)

Scales

Work with the following types of scales on maps, plans and in the construction of models:

• number scales expressed in the form 1:500

• bar scales expressed in the form

 with an understanding of the advantages and disadvantages of each type of scale and the situations in which one type of scale is more appropriate than the other.

In order to:

Calculate actual length and distance when map and/or plan measurements are known.

Calculate map and/or plan measurements when actual lengths and distances are known

using a given scale to inform the drawing of 2-dimensional plans and pictures and the

 construction of 3-dimensional models.

QUESTION 11

11.1.	Zenande and her three friends live in Dundee. One of the friends lives in Richards Bay. They are planning to take a vacation from the 13th to the 16th of June 2025 to Ballito via Richards bay. They will use Zenande'car Use the map on ANNEXURE A to answer the following questions.

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

	11.1.2	Give ONE advantage and ONE disadvantage of the scale mentioned in 11.1.1.	(2)

	11.1.3	Explain the meaning of the given scale.	(2)

	11.1.4	State the general direction of Ballito from Dundee.	(2)

	11.1.5	Name the game reserve closer to Pongola.	(2)

	11.1.6	Write down the ratio of the number of parks to the number of game reserves.	(2)

	11.1.7	Identify the national road they will use in their vacation.	(2)

11.1.8   Calculate the actual distance in kilometres (as the crow flies) they will travel from

Dundee to Ballito via Richards Bay using the given scale.

(7)
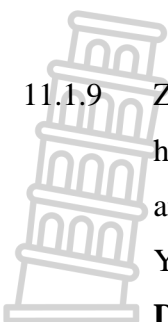
11.1.9   Zenande will be driving at an average speed of 100km/h. Determine the time (in

hours and minutes) they can expect to arrive in Ballito if they leave Dundee at 05:00

and spend 2 hours in Richards Bay.

You may use the formula:

Distance = Average Speed × Time

(4)

11.1.10   They claim that R11 500 will be enough for sleeping and the food in the unit. Show

with calculations whether their claim is valid or not. consumes 6.1 litres of petrol per

100 kilometres and has a tank capacity of 50 litres.

Verify, showing ALL calculations, whether a full tank will be enough for their return

trip.

(5)

11.1.11   The petrol cost price per litre is R22.34. Calculate the full tank price.   (2)

11.1.12   Most drivers prefer driving on National Roads. Explain by giving THREE reasons for

your answer.

(2)

11.2   They have already found a beachfront 4 sleeper unit at a cost of R1 800/night, breakfast costs R
185,00 and dinner costs R 280,00 per person. If they decided to have all their breakfasts and
dinners in the unit,

11.2.1   Determine the number of nights, breakfasts and dinners they will spend.   (3)

11.2.2   They claim that R11 500 will be enough for sleeping and the food in the unit. Show

with calculations whether their claim is valid or not.   (3)

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ANNEXURE A

QUESTION 11

KWAZULU NATAL MAP

Source:orangesmile.com
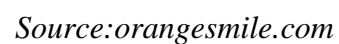
Maps

Work with the following maps:

• street maps with and without a grid reference system

• national and provincial road and rail maps

•strip charts showing distances on a portion of road

• residential or housing estate maps.

In order to:

Describe the position of an object (e.g. *buildings, furniture, seats*) in relation to surrounding objects.

Describe the position of a building in relation to surrounding buildings (e.g. *the building is directly across the road from the double-storey brick building*).

Find locations, follow directions and develop directions for travelling between two or more locations using the following mapping reference systems and/or techniques:

• directional indicators "left", "right", "along", "straight", "up" and "down"

• house and/or building numbering systems

• numbering systems used for seating in sports stadiums

• grid reference system (*e.g. North Street is located on AD14*)

12.1. Alondwe and his mother will be driving from Durban to Johannesburg. They will be using an AUDI A3 with a 50 litre fuel tank capacity and fuel consumption of 4.8 litres per 100 km.

The map below shows the distance from Durban to Johannesburg.
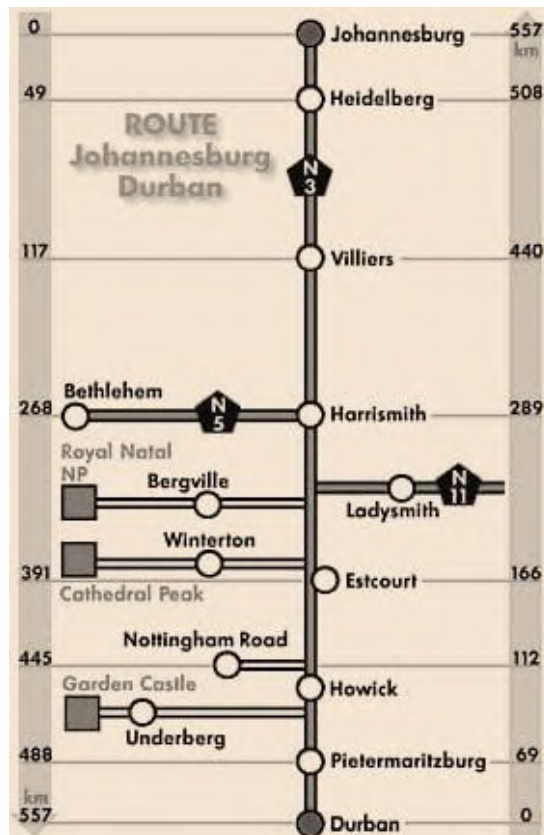
Adapted from:www.ecexams.co.za

Use the given information and the map to answer the following questions.

12.1.1   Name the type of map given.   (2)

12.1.2.   Describe the route they will follow when going to Johannesburg .   (2)

12.1.3   Identify the total distance they will travel.   (2)

12.1.4   Show that the distance from Durban to Pietermaritzburg is 20 km more than the distance from Heidelberg to Johannesburg.   (5)

12.1.5   List the national roads found on the map.   (3)

12.1.6   State ONE difference between a strip chart and a road map.   (2)

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12.1.6   Alondwe's mother is planning to meet her friend on their return trip.   (2)

- From Johannesburg she will pass Heidelberg and Villiers

- In Harrismith she will take right to reach her friends destination. Give the name of her destination

12.1.7   During their return trip they left Johannesburg at 07:30. The average driving time from Johannesburg to Durban is 5 hours 41 minutes. She will spend 1hour 30 minutes with her friend. She claims that they will arrive at home at 15:00.

Verify ,showing all calculations, if her claim is valid.

Data handling

In Grade 11, the type of data dealt with is limited primarily (but not exclusively) to data including:

• two sets of data containing multiple categories (*e.g. working with different test scores categorised into mark*

categories and organised according to gender)

• values that can be read directly from graphs and/or tables without the need for estimation

• data relating to the wider community and more complex social issues that are less familiar to learners, e.g.:

- sports results/statistics for provincial and/or national sports events

- sales figures for a business

- profile of shoppers at a shopping centre

- vehicle statistics (as an indication of income level) of shoppers at a shopping centre

- price history data for grocery items

- data on housing, toilet, water and electricity facilities for a small community

- data on employment rates for a small community

QUESTION 13

Data handling is a process which involves the following activities viz question development, collection, organizing and classification, summary, representation and analysis.

13.1 **TABLE 1** below contains a list of explanations and definitions of concepts used in Data Handling.

EXPLANATIONS AND DEFINITIONS OF CONCEPTS	
A	Data is collected by observing and not interfering with the subject
B	Data is collected through a set of questions that are written and given to the subjects to answer.
C	Data is collected where the subject responds orally.
D	Data is collected from the internet.
E	Data can be easily accessed and updated.

Use **TABLE 1** above and match an explanation with each of the concepts below. Write only the letter
(A -C) next to the question (13.1.1 to 13.1.3), e.g., 13.1.4 D.

13.1.1   Observation   (2)

13.1.2   Interview   (2)

13.1.3   Questionnaire   (2)

13.2   Classify each of the following as categorical or numerical and discrete or continuous data.

13.2.1   Height of basketball players.   (2)

13.2.2   Number of girls in a grade 12 classroom.   (2)

13.2.3   Types of vehicles in the parking lot.   (2)

13.2.4   The average rainfall in KwaZulu Natal.   (2)

13.3   Name the tool or the instrument that was used to collect the following data.

13.3.1   The number of cars passing at an intersection between 06:00 and 18:00.   (2)

13.3.2   The time spent studying, playing, and watching tv by grade 11 learners.   (2)

13.4   The local business owner wants to donate shoes to one of the schools in the area. The enrolment is 600 learners. A sample was randomly selected, and the following shoe sizes were recorded.
7; 7; 7; 7; 4; 4; 4; 4; 4; 4; 4; 4; 4; 4; 5; 5; 5; 5; 5; 8; 8; 5; 5; 5; 4; 4; 5; 5; 5; 6; 6; 6; 6; 6; 6; 4; 4; 6; 6; 6; 6; 6; 7; 7; 7; 7; 7; 7; 7; 7; 8; 8; 8; 9; 9; 9; 9; 7; 7; 7; 7; 7; 7

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Source: *www.microsoft.com*

13.4.1   Define the term *sample* in the given context.   (2)

13.4.2   Copy and complete the frequency table below to organize the data collected

Shoe size	Tally	Frequency

(6)

13.4.3   Explain with justification whether the above data is discrete or continuous.

(3)

13.4.4   Based on the size and the method the sample was selected. State with reasons if the sample is biased or unbiased.   (3)

QUESTION 14

14.1   A researcher is interested in the effect of music on the brain among students. He decided to conduct his research on 50% of the students who were going to take a test. The total number of students to write the test was 130.

This Photo by Unknown Author is licensed under CC BY

Source: *www.microsoft.com*

14.1.1   Identify the following (a) Sample size   (2)

(b) Population size   (2)

14.1.2   Identify the method that was used to collect the above data   (2)

14.1.3   State the advantage and the disadvantage of the method mentioned in 14.1.2   (2)

14.2   The basketball coach wants to select players for the two teams at Claremont High School.

ANNEXURE A shows the table of the recorded data for the participants. The pictures below show

MALE BASKETBALL TEAM	FEMALE BASKETBALL TEAM

Source: *www.microsoft.com*

Use the table in ANNEXURE A to answer the questions that follow.

14.2.1 Use the frequency tables to organize the data based on the height and gender and mass

Frequency Table 1. Height distribution by gender				
Height Category (m)	**Males**		**Females**	
	Tally	**Frequency**	**Tally**	**Frequency**
1,50-1,59				
1,60-1,69				
1,70-1,79				
1,80-1,89				
1,90-1,99				
> 2m				

(5)

Frequency Table 2. Mass distribution by mass				
Mass Category (kg)	**Males**		**Females**	
	Tally	**Frequency**	**Tally**	**Frequency**
60-69				
70-79				
80-89				
90-99				
>100				

(5)

14.3

14.3.1   Determine the sample size   (3)

14.3.2   Explain whether the collected data is discrete or continuous   (3)

14.3.3   Analyze the organized and comment on the trend of male and female players   (3)

14.3.4   The coach stated that the probability of selecting a player that is taller than!.7m is more
         than 80%. Verify with calculations whether the statement is correct.   (3)

14.3.5   Express the number of males with a height less than 1,7m as a percentage of all male
         players.   (3)

14.3.6   Name the step at which the above data is represented in the statistical cycle (2)

ANNEXURE A

Gender	Height (m)	Mass(kg)
Male	1.76	76
Male	1,68	78
Female	1,72	89
Female	1,83	86
Female	1,55	65
Male	1,83	90
Male	1,85	92
Male	1,86	88
Female	1,58	66
Female	1,76	72
Female	1,72	65
Female	1,70	66
Male	1,66	76
Male	1,78	68
Male	1,85	92
Male	1,87	88
Female	1,52	65
Female	1,76	68
Male	1,65	75
Female	1,69	78
Male	1,64	72
Female	1,82	86
Female	1,72	65
Male	1,74	83

REPRESENTING DATA

- Represent single sets of collected data using, pie charts, histograms, single bar graphs, and line graphs, with an understanding that each type of representation offers a different picture of the data and that certain types of representations are more appropriate for particular types of data.

- It is expected that it will be possible to read and identify values in graphs directly from the values provided on the axes and without the need for estimation.

- Read and select data from representations (that is, tables and graphs) containing data in order to answer questions relating to the data.

QUESTION 15

15   Animal research studies was done by the United States Department of Agriculture (USDA) in 2022 and 2024 to determine the numbers and kinds of animals present on farms and ranches. Table 1 below shows the research results in 2022 and 2024.

TABLE 1: USDA Results showing the Kinds and Numbers of Animals on Farms and Ranches in 2022 and 2024.

Kinds of Animals	Numbers in 2022	% Of Total in 2022	Numbers in 2024	% Of Total in 2024
Guinea Pigs	169 528	20,3	183 237	22,3
Hamsters	121 930	14,6	102 633	12,5
Rabbits	150 344	18.0	139 391	17

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Dogs	59 358	7,1	60 979	7,4
Non-Human Primates	57 735	**A**	71 188	8,7
Pigs	45 392	5,4	50 226	6,1
Sheep	10 315	1,2	12 196	1,5
Other Farm Animals	27 393	3,3	20 597	2,5
Cats	21 083	2,5	18 898	2,3
All other covered *species	171 375	20,5	161 467	19,7
Total	**834 453**	**100**	**820 812**	**100**

*species - individuals with similar characteristics that are able to reproduce with each other.

Source: *https://www.nass.usda.gov/AgCensus/*

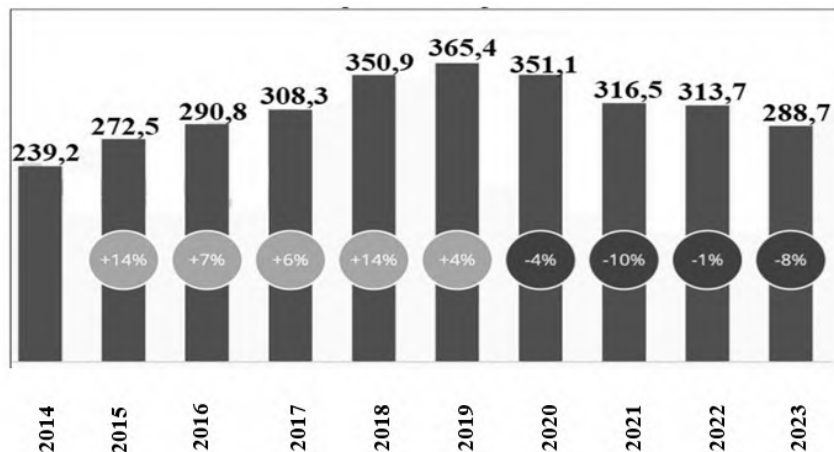Use the information above to answer the following questions.

15.1   Identify the minimum and maximum numbers of animals in 2024.   (2)

15.2   Calculate the median of the numbers of animals in 2024.   (3)

15.3   Calculate the difference in the percentage (%) of pigs in 2022 and 2024.   (2)

15.4   Determine the mean number of animals in 2024.   (3)

15.5   Calculate the range of the numbers of animals in 2022.   (2)

15.6   Calculate the value of **A**, the % of total in 2022.   (3)

15.7   An incomplete Bar Graph showing the number of animals in 2024 is drawn on the
        ANSWER SHEET in ANNEXURE A. Draw in the remaining bars on ANNEXURE A.   (4)

15.8   Determine, as a decimal fraction, the probability of randomly selecting an animal that will
        be from any kind of animals with a population less than 50 000 in 2022.   (3)

ANNEXURE A for question 15.7

BAR SHOWING THE NUMBER OF ANIMALS SURVEYED BY THE USDA IN 2024
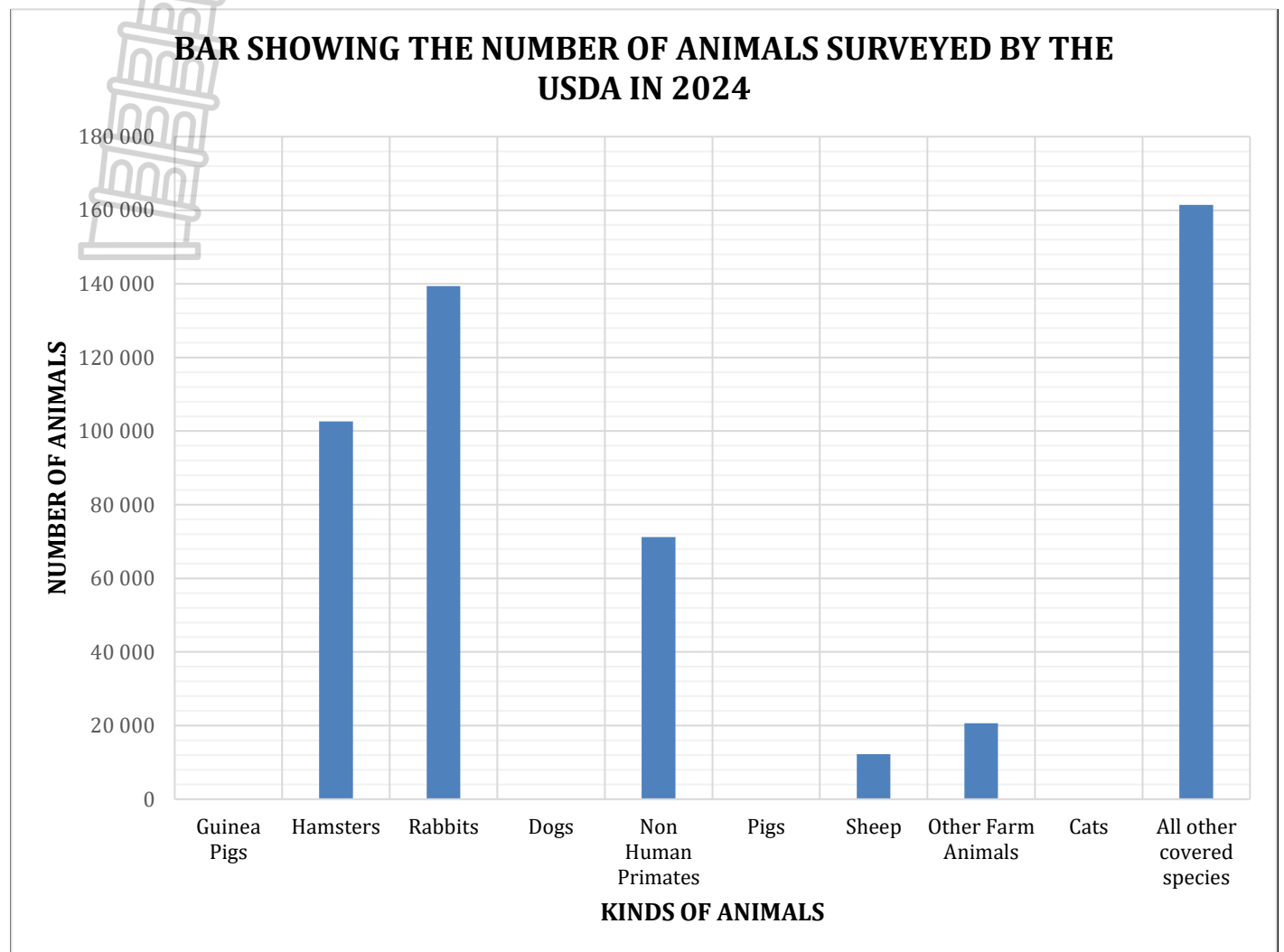
16.1 | Culinary fruit and vegetable sources the finest fruits and vegetables from well-established farms, with decades of experience, all across South Africa (SA). Some of SA's favourite brands in

TIGERBRANDS portfolio, include KOO, All Gold, Mrs. Balls, Crosse and Blackwell and Black Cat. The following graph shows the net profit of KOO canned fruit jams from the TIGERBRANDS Factory in Paarl in the Western Cape in SA from the years 2014 to 2023.

GRAPH 1: NET PROFIT OF KOO CANNED FRUIT FOR THE PERIOD 2014 TO 2023.

Source: *https://www.tigerbrands.com/aboutus/strategyportfolio/food-koo*

NOTE: The values on top of each bar are given in millions of Rand.

Use the information above and answer the questions that follow.

16.1.1 Calculate the mean net profit over the entire period. (3)

16.1.2 Show how the percentage change for 2020 was calculated.

You may use the following formula:

$$\text{Percentage change} = \frac{New\ value - Old\ value}{Old\ value} \times 100\%$$ (3)

16.1.3 Explain the trend that the factory experienced over the years in terms of their net profit. (4)

16.2 | The Volkswagen (VW) Group in South Africa in 2022 recorded manufacturing 2 500 cars per month and uses 8 different colours of paint for the cars. Graph 2 below shows a Pie

Chart which represents the percentage cars per month in 2022 that is painted in each of the different colours.

GRAPH 2: PIE CHART SHOWING THE COLOURS OF VW CARS IN PERCENTAGE PER MONTH IN 2022.

Source: *https://www.google.com/search?q=volkswagen+survey&rlz/*
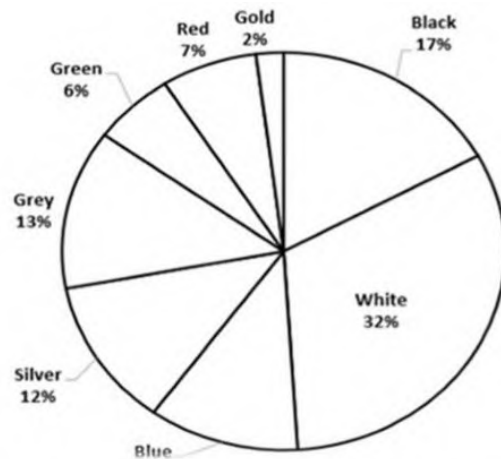
Use the information above and answer the questions that follow.

16.2.1   Determine how many blue and gold cars are manufactured in total per month.   (7)

16.2.2   Identify the three colours that make up exactly 55% of the total number of cars manufactured in a month.   (2)

16.2.3   Provide one reason why white cars are the most popular colour sold at VW.   (2)

16.3   Two grade 12 learners from Siphokuhle High School, Lerato and Simphiwe, obtained the following Admission Point Score (APS) for their NSC Exams in 2024 as shown in Table 2.

TABLE 2: *APS for Lerato and Simphiwe for the NSC 2024 Exams.

SUBJECTS	Lerato's APS	Simphiwe's APS
IsiZulu Home Language	6	5
Mathematical Literacy	4	5
Life Orientation	3	3
Accounting	4	3
Economics	3	5

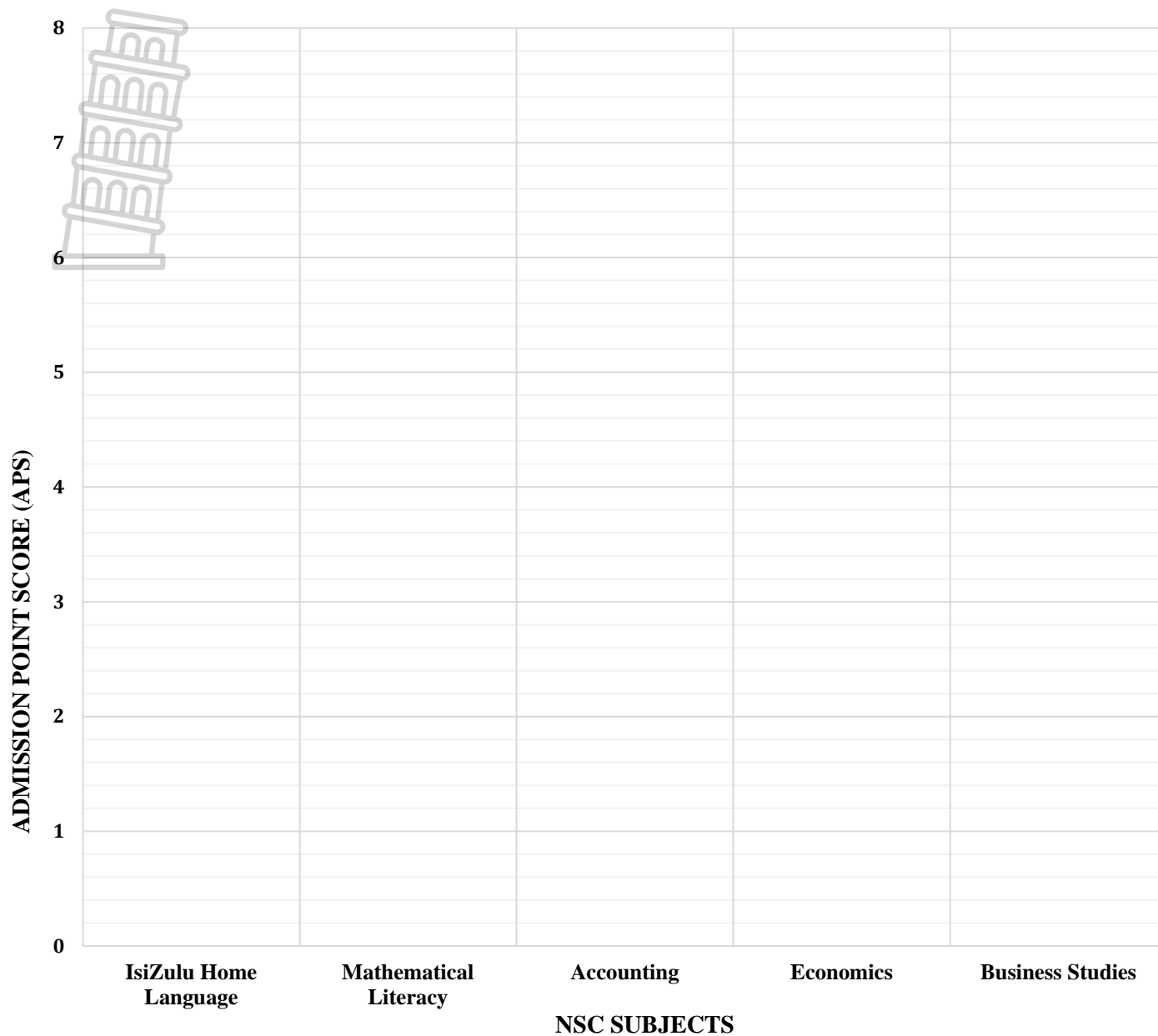| Business Studies	6	5
Total:	**31**	**31**

APS are points assigned to the percentages obtained in each of the seven NCS subjects.

Source: *https://www.schools4sa.co.za.kzn.estcourt*

Use the information above and answer the questions that follow.

16.3.1   Draw a compound bar graph on the ANSWERSHEET in ANNEXURE B that represents the APS of Lerato and Simphiwe in the following 2024 NSC subjects: IsiZulu HL; Mathematical Literacy; Accounting; Economics and Business Studies   (7)

Annexure B for question 16.3.1

COMPOUND BAR GRAPH SHOWING LERATO and SIMPHIWE'S APS IN 2024

Y-axis: ADMISSION POINT SCORE (APS) — scale from 0 to 8

X-axis: NSC SUBJECTS — IsiZulu Home Language, Mathematical Literacy, Accounting, Economics, Business Studies

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INCOME, EXPENDITURE, PROFIT/LOSS

Identify and perform calculations involving income, expenditure, profit and loss values, including:

Fixed, variable and occasional *income* values and fixed, variable, occasional, high-priority and low-priority *expenditure* values from the following sources: business and/or workplace income:

o income from sales and/or services rendered

o donations and/or grants

o interest on money in accounts and/or investments

In order to:

Manage finances by:

- Analysing and preparing income-and-expenditure statements and budgets, with an awareness of the difference between these two documents, for: - an individual and/or household, a comparison of income/expenditure/profit values over two years *(analysis only)*

- budgets showing a comparison of projected versus actual income, expenditure and profit/loss values *(analysis only)* - large projects and/or events (e.g. fund-raising event or a wedding)

QUESTION 17

17.1 | Andile has a side hustle selling ice-cream from a municipal stall at Preston Beach. He plans to save R8 000 to purchase a laptop. He pays a rental of R1 000 per month to the municipality. His average running costs for his business amount to R1 200 per month. It costs him R10 per ice-cream and he sells each one for R20.

PICTURE OF AN ICE CREAM STALL

Source: Adapted from *https://www.123rf.com/clipart-vector/ice_cream*

Use the information above to answer the questions that follow.

17.1.1   Identify two variable costs that the business may have.   (2)

17.1.2   Determine Andile's total fixed expenses for the month.   (2)

17.1.3   Write a formula to calculate his Total Income.   (2)

17.1.4   Write a formula to determine his Total Monthly Expenses.

TOTAL MONTHLY EXPENSES = R_____ + _____ $\times$ *n*

Where *n* = number of ice- creams   (2)

17.5   TABLE 1 below shows the Total Monthly Expenses and Total Income from the sale of ice-creams

TABLE 1: Total Monthly Expenses and Total Income from the Sale of Ice-Creams

Number of Ice- creams	0	50	B	150	200	250	300
Total Monthly Expenses (R)	A	2 700	3 200	3 700	4 200	4 700	5 200
Total Income (R)	0	1 000	2 000	3 000	C	5 000	6 000

Use TABLE 1 to answer the following questions.

17.5.1   Determine the missing values for **A**, **B** and **C**.   (6)

17.5.2.   Andile says that he expects to start making a profit after selling 200 ice- creams. Use
calculations to critique his statement.   (4)

17.5.3   Use **ANNEXURE A** to draw and label the graphs of Total Monthly Expenses and Total
Income. Write down the Break Even Point.   (5)

17.5.4   Use the graph to estimate the minimum number of ice- creams that should be sold for
Andile to make a profit.   (2)

17.6.   Andile estimates that he needs to sell 500 ice- creams to make enough **profit** to purchase
the laptop. Use calculations to verify if he is correct.   (6)

17.7.   Another competing business selling popsicles (ice lollies) opened up next to Andile's
stall. State one way that Andile can continue to attract customers to his stall.   (2)

ANNEXURE A

QUESTION 17.5.3.

QUESTION 18

18.

Tyla is considering running a spaza shop from home. She downloads an advertisement from her local Checkrite store and is using it to perform calculations to see if she can run a profitable business.
Below is an extract of the advertisement.
ADVERTISEMENT FROM CHECKRITE SUPERMARKET, UMZINTO
Source: © *2025 Instagram from Meta*
Use the advertisement above to answer the questions that follow.

18.1. Convert the price of the Bokomo cereal to cents. (2)

18.2. Calculate the unit price of the Eezee Noodles. (2)

. 18.3 Identify the second least expensive item. (2)

18.4. Show if Tyla's budget of R1 850 is enough to purchase 10 bags of Nyala Maize Meal, 10 packets of White Star Instant Porridge, 10 Rama Original bricks, and 30 cans of Rhodes Baked Beans. (3)

18.5.   Tyla intends to sell the Nola Mayonnaise at a 60% markup. Determine the selling price of the

mayonnaise.   (2)

18.6.   Determine the price of the soap as a percentage of the price of the oil.   (3)

18.7.   Tyla decides to add R20 on to the cost price of every item to arrive at her selling price. She

claims that her **profit margin** will be 35% if she buys and sells a unit of each item. Verify if

her claim is valid.   (6)

18.8.   Checkrite Supermarket purchases items in bulk. They were invoiced R6 325 for a pallet of

baked beans. Each pallet contains 250 six packs of baked beans cans. Show that Checkrite

Supermarket makes more than 120% profit on the sale of 3 cans of baked beans.   (5)

INTEREST (LOANS; INVESTMENTS & BANK ACCOUNTS)

Perform calculations involving simple and compound interest through manual calculations and without the use of formulae*.

Represent simple interest growth scenarios using linear graphs and compound interest growth scenarios using graphs showing compound change.

In order to

Investigate the following scenarios:

• loan agreements between family members where repayments are made only once at the end of the loan

• investments in fixed deposit accounts where the money is deposited and withdrawn from the account only once

• bank accounts with a changing balance

QUESTION 19

19.1   Zabalambo is the learner at Mawombe Christian Academy, she needs a laptop for her web design course. She came across the advert below.

Source: *www.cataloguespecials.co.za*

Her parents are thinking of taking a loan to buy the laptop for her. They receive a post from Ndalwenhle micro loans:

TABLE 1: NDALWENHLE'S LOAN AMOUNTS AND MONTHLY REPAYMENTS

Loan Amount	Monthly repayments				
	1 month	3 months	6 months	12 months	24 months
R5 000	R5 650	R2 292	R1 333	R842	R508
R7 500	R8 475	R3 884	R2 000	R1 263	R763
R10 000	R11300	R4583	R2 667	R1 683	R1 017
R15 000	R16 950	R6 875	R4 000	R2 525	R1 525

- *All repayments include a once-off initiation fee of 15% of the principal debt and a service fee of R40 per month for the term of the loan*

Source: *www.efinancialmodels.com*

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

19.1.1   Read the fine print and calculate the initation fee charged on a principal amount of R15 000.   (2)

19.1.2   Write down the amount of loan that they should select to buy the laptop.   (2)

19.1.3   If they choose to pay the loan back over 12 months , determine the amount that they would actually pay for the laptop.   (3)

19.1.4 Calculate the amount that would be paid by Zabalambo's parents for service fees for a 2 year loan of R5 000. (3)

19.1.5 Determine the interest that would be earned by micro lender on a principal debt of R10 000, repaid montly over 6 months. (4)

19.1.6 Use your answer from 19.1.5 to calculate the simple interest rate charged per month on this loan. (4)

19.2 | Zabalambo's cousin check for other micro loan lenders . A micro lender offers her a R5 000 loan at an interest rate of 20% simple interest per month for a 6 months period . This loan is subjected to 10% initiation fee to set up the loan and is charged the maximum service fee of R60 per month. |

Use the information above to answer the following questions.

19.2.1. Calculate the total amount that she must repay at at the end of the 6 months loan period. (7)

19.2.2 If she was to pay this loan off in 6 equal monthly instalments , she claim that the monthly repayment for this micro lender will be less than the monthly repayment on Ndalwenhle micro loan Verify , by calculation whether her claim is valid. (3)

19.2.3. Calculate the percentage of the total cost of this loan paid in service and initiation fee. (3)
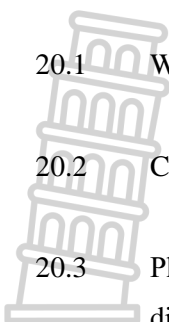
QUESTION 20

Phetolo wants to buy a fridge for his grandmother on her birthday. He saw this advertisement in a newspaper article

Source: *www.cataloguespecials.co.za*

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Use the above information to answer the following questions.

20.1   Write down the cash price for the fridge.   (2)

20.2   Calculate the original price of the fridge.   (2)

20.3   Phetolo's grandmother has a fridge with a capacity of 550 *litres*, she claims that the capacity difference between the two fridges is less than 50 *litres*, verify whether her statement is correct.   (4)

20.4   Define the term "*hire purchase*".   (2)

20.5   Calculate the total amount expected to be paid by Phetolo if he decided to buy the fridge through hire purchase.   (2)

20.6   Calculate the difference between the cash price and the total amount to be paid calculated in 20.6   (2)

20.7   Phetolo decided to take a loan in order to buy the fridge cash. He approached two money lenders and he will be paying the loan after 3 years.
- Nobuhle Financial Service offers him a loan of R22 000 at an interest rate of 8% p.a simple interest
- ZXY offers him a loan of R22 000 at an interest rate of 6% p.a compounded annually

20.7.1   Explain the difference between *simple interest* and *compound interest*   (4)

20.7.2   Calculate the total amount that will be paid by Phetolo after 3 years at Nobuhle Financial Service.   (5)

20.7.3   Phetolo's sister advise him to take a loan from ZXY and she claim that he will be paying less interest than in Nobuhle Financial Service. Verify whether her statement is valid, show ALL your calculations.   (7)

[30]

Plans (floor, elevation and design plans) Use the following plans:

- Rough and scaled elevation plans (front, back and side) showing a side view perspective,

- Rough and scaled design drawings of items to be manufactured (e.g. *clothing; furniture*).

In the context of:

• A familiar structure (e.g. *classroom; room in a house → bedroom or lounge*)

• A less familiar structure (e.g. *office space containing cubicles; a garden/tool shed*)

In order to:

- Understand the symbols and notation used on plans (e.g. *the symbol for a window is a double line; the symbol for a door is a vertical line attached to a quarter circle indicating the swing direction of the door*).

- Describe what is being represented on the plans.

- Analyse the layout of the structure shown on the plan and suggest alternative layout options.

- Determine actual lengths of objects shown on plans using measurement and a given scale (number or bar scale).

- Determine quantities of materials needed by using the plans and perimeter, area and volume calculations.
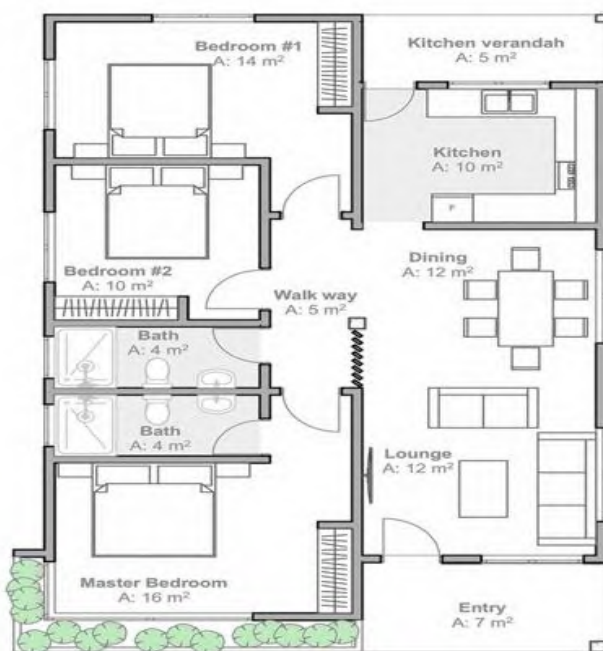
QUESTION 21

21.1

The Government Housing Department has provided the affordable houses for middle class workers, Mr Mthembu the teacher at Siphuthando Primary School was afforded an opportunity to buy an affordable house, the floor plan below represent his house on the paper

Floor Plan of Mr Mthembu House.

ELEVATION SIDE A

Source: Adapted from www.maramani.com

Use the information above to answer the questions that follow.

21.1.1   Define the term *floor plan* in the given context.   (2)

21.1.2   Determine the number of windows does the house have.   (2)

21.1.3   Use the ruler to measure the dimensions of the plans and use the given scale to
         calculate the actual dimensions of the plan.   (5)

21.1.4   Explain what does the scale 1:100 on the plan mean?   (2)

21.1.5   Identify the rooms that are facing the south.   (2)

21.2

The area of the lounge and the dining rooms are provided on the plan, Mr Mthembu decided to tile the floors with Marble tiles and Porcelain tile at the bathroom floor and walls. The porcelain is sold in boxes, the box contains four (4) tiles.

PICTURE OF THE TILES WITH DIMENSIONS

Surface Finish: Marble
Size: 900 x 600mm
Thickness: 10mm
Color: White

900mm

600mm

Note
- Area to be tiles is 4m2
- Height of the bathroom wall is 220 cm from the floor.
- The basin has dimensions: 400 x 430 x 155 mm|The door dimensions: 800 x 2000 mm
- The bathroom window dimensions: 1200 x 1800 mm

Porcelain Tile
- Application: Wall & floor
- Size: 600 x 300 mm
- Thickness: 6 mm
- Grouting Gap: 2 mm

www.ctm.co.za

Use the information above to answer the questions that follow.

21.2.1   Determine the number of the marble tile required to tile the dining room and lounge   (7)

21.2.2   Determine the number of boxes required to tile the bathroom. The box contained 4 tiles.

You may use the formula: **Area = l × b**   (7)

21.2.3   Mr Mthembu wants to tile the master suite bedroom. Calculate how much it will cost to tile this bedroom if the square metre of the porcelain tile costs R129.00/m^2 .

       (3)

QUESTION 22

22.1.

Mr Zaks, the technician at Mthashana TVET college, intended to build a small affordable house. He went to the Mr Zulu the architecture request him to develop the small affordable house plan. The floor plan and the house was presented.

PICTURE OF THE HOUSE	PICTURE OF THE HOUSE PLAN
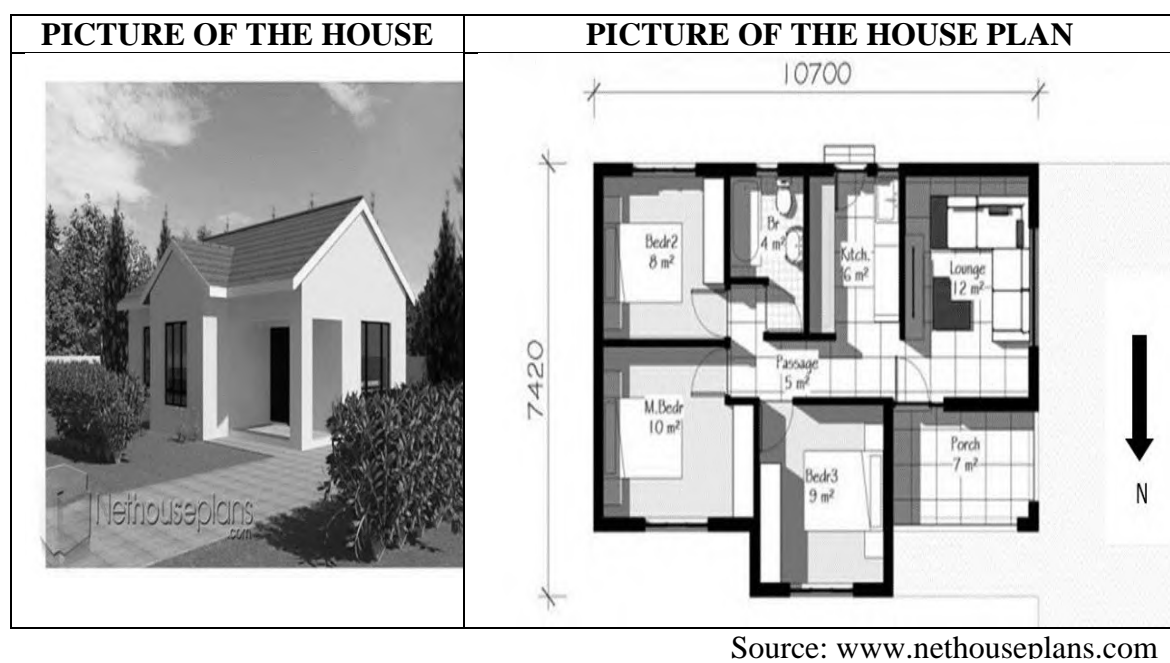
Source: www.nethouseplans.com

Use the information above to answer the questions that follow.

22.1.1   Determine the appropriate scale used to draw the plan above. Leave your answer in a form of 1 : ___.   (5)

22.1.2   Determine the elevation side that will not be exposed in the sun raise in the morning.   (2)

22.1.3   How is a floor plan different from an elevation plan?   (2)

22.1.4   State whether the plan given above is a close plan or an open plane.   (2)

22.1.5   Which rooms of the house plan facing the North?   (3)

    22.1.6   Mr Zaks claiming that, during winter season bedroom 2 and master bedroom are the colder rooms, mention TWO reasons to support his statement.

(4)

    22.1.7   Draw the sign from the floor plan that represent door, and hence indicate the number of doors on the floor plan.

(3)

Instruction and assembling diagrams

Use instruction/assembly diagrams, containing words and/or pictures, found in manuals for:

• plastic models

• un-assembled wooden furniture units

• cell-phones

• electrical appliances that require individual components to be connected

• children's toys including *Lego*-type kits.

In order to:

Complete the task presented in the instructions and/or explain what the instructions mean and/or represent, using everyday language.

QUESTION 23

23.1

Small Rectangular perfume box	Bigger Rectangular delivery box
Dimensions of the perfume box Length: 90 mm Width: 8 cm Height: 13,5 cm	**Dimensions of Rectangular delivery box** Length: 55 cm Width: 45 cm Height: 32 cm

Bheki buys different types of perfumes in bulk from the United Arab Emirates (UAE) and sells them in his shop in Pietermaritzburg. The perfumes come in small rectangular boxes and are packed into bigger rectangular delivery boxes.

[Adapted from: www.dehneeperfumefactory.com]

Use diagrams and information above to answer the following questions.

23.1.1   Explain the term *perimeter* in the above context (2)

23.1.2   Calculate the perimeter base of the perfume box.
You may use the formula:
$$P = 2(l + w)$$
(4)

23.1.3   Calculate the number of perfume boxes that will be packed along the length of the bigger box if the length of the perfume box is packed along the length of the bigger box.

(3)

23.1.4   Calculate the number of perfume boxes that will be packed along the width of the bigger box. (3)

23.1.5   Hence, calculate the total perfume boxes will fit in the base of the bigger box. (2)

Bheki bought a furniture item to use in his shop. The diagram below shows the steps and instructions of assembling it.
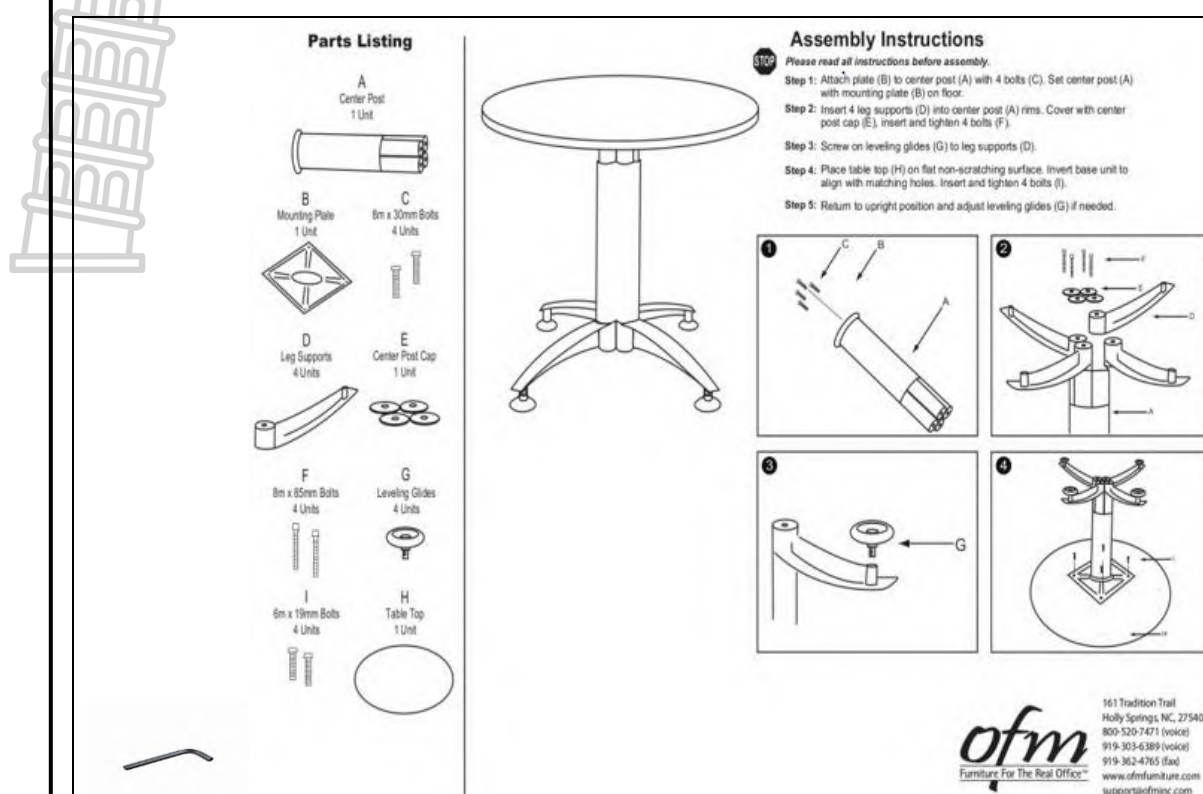
[Source: furniture for the real office.com]

Study the diagram above and answer the questions that follow.

23.2.1   Name the furniture item being assembled   (2)

23.2.2   Determine the total number of loose parts needed to assembly the furniture piece   (2)

23.2.3   Give the name of the tool/s that can be used tighten the bolts.   (2)

23.2.4   Give ONE precaution one must observe during assembling   (2)

QUESTION 24

24.1 | Mr Dlangamadla is a truck driver and delivers tyres around South Africa. He and his assistants' packs tyres to the maximum into a truck before he delivers. The tyre and the delivery truck have the following dimensions.

Dimensions of the tyre	Picture of Delivery truck

Inner D = 46 cm

Sidewall Height

Outer Diameter = 80 cm

Width = 0,25 m |

Dimensions of the delivery truck
Length: 13,6 m
Width: 3,2 m
Height: 2,5 m |

[Source: https://autoandtrucktyres.co.za]

Use diagrams and information above to answer questions that follow.

24.1.1   Explain the term *diameter* in the above context. (2)

24.1.2   Calculate the sidewall height of the tyre. (4)

24.1.3   Calculate the outside circumference of the tyre. (2)

         You may use the following formula:

$$C = 3,142 \times diameter$$

24.1.4   Calculate the number of tyres that can fit inside the truck if the diameter of tyre is packed along the length of the truck and the width of tyres is along the height of the truck. (5)

24.1.5   Truck driver assistant, Bright, state that the truck can load more tyres if the   (6)
diameter is packed along the height of the truck and the width of tyre is packed
along the width of the truck. Use calculations to justify if his statement in
CORRECT.

24.2

Bright bought a new upright mobile fan from Game store and will use the given
diagram to assemble it at home.

DIAGRAM OF THE FAN
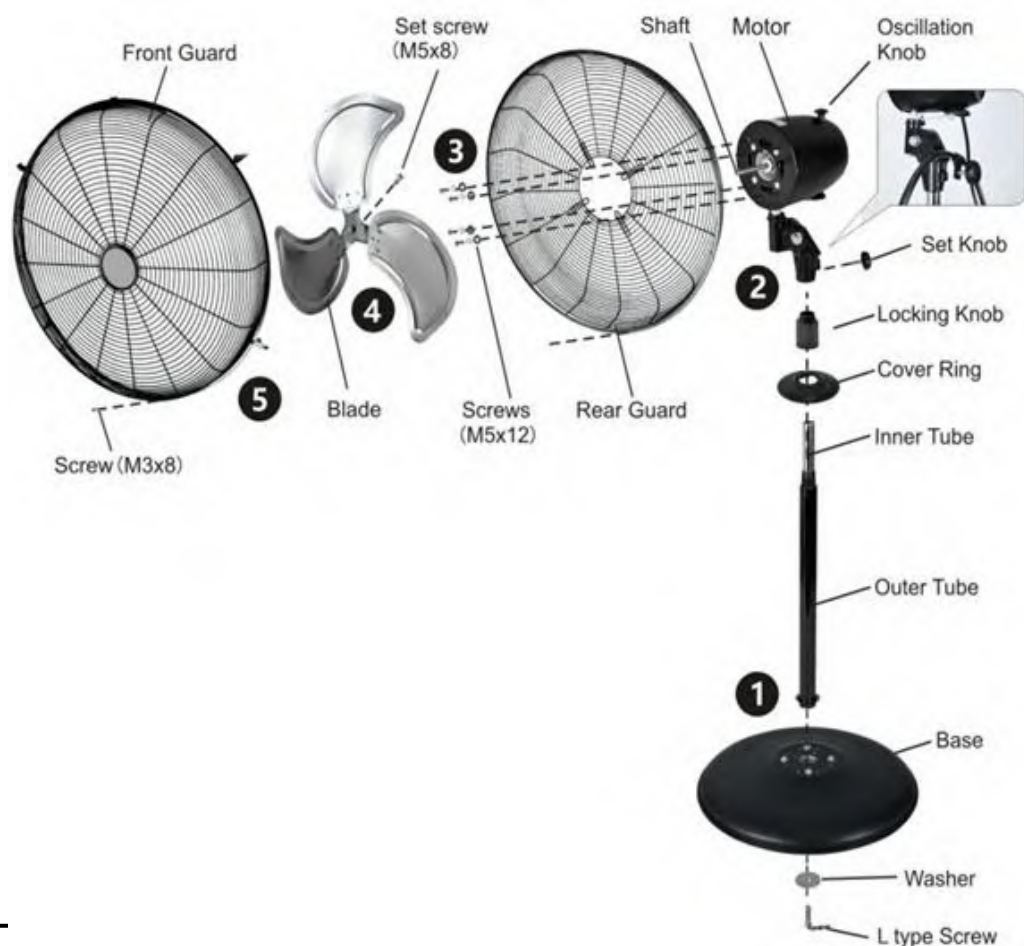
Use the diagram above to answer the questions that follow

24.2.1   Give ONE advantage of having numbers in the assembly diagram.   (2)

24.2.2   Determine the total number of screws needed to assemble the fan.   (2)

24.2.3   Hence, determine the probability, as a fraction, of randomly selecting a M3 screw.   (2)

MATHEMATICAL LITERACY GLOSSARY OF TERMS

Bar graph	The graphical representation of data that uses bars to compare different categories of data. 90° graph using bars to show frequencies (horizontal and vertical graph), the vertical heights of a set of bars of equal breath represent the values of the dependant variable in a data set.
Biased question	Biased question is the question containing factors that may influence the respondent to answer in a way that is not entirely true.
Broken line graph	A graph that has numbers that alternate going up and down and do not keep to a curved consistent line.
Categorical data	The data that is given in the form of words, names, or labels. It is generally descriptive in nature, as data classified and organized into categories.
Certain	Definitely going to happen e.g. getting heads or tails when tossing a coin is certain.
Class Interval	Data that is divided into a smaller number of categories
Classify	Identify the type or class.
Compound bar graph	(Also referred as vertical stack graph or component bar chart) display two or more sets of data. However, it shows a part/whole relationship so you can easily see what amount each data group makes up of the whole.
Compound events	Two or more events that happen, e.g. tossing a coin and rolling a dice.
contingency table	A two-way table representing the outcomes of an event.
Continuous data	The data that that is given as numbers including the decimal numbers and/or fractions. Numerical data (measurements like weight or age).
Data	Information, series of observations, measurements, facts; collection and recording of information for statistical investigation. It is raw information that has been collected, without any organization or analysis.
Data collection sheet	Two-column table showing what is observed and how many times it was observed; items of information.
Data handling	Data handling refers to the process of collecting, organizing, summarizing, representing, and analyzing information.
Discrete	Separate; distinct; opposite of continuous.
Discrete data	Numerical data (fixed numbers like size of family). Data that can have only certain values (quantities that can be counted, usually whole numbers).
Double bar graph	The most common multiple bar graph that compares two sets of data.
Equivalent	Quantities that have the same value.
Estimate	Roughly work out; roughly calculate.

Even	Chances of any outcome happening are equal; if a normal six-sided dice is rolled, the chance that any one of the numbers 1,2,3,4,5 or 6 could show is the same.
Event	An activity e.g., rolling a single dice.
Fifty-fifty (even) outcome	Chances of something happening or not happening are the same.
Frequency (f)	Number of times a data value is recorded
Frequency table	Table showing frequencies in organised form. Table summarising the frequencies of all the data values in a data set.
Group	Put into classes, sort, arrange, organise.
Grouped data	The data given in the form of intervals.
Histogram	90° graph using adjacent bars to show frequencies of continuous numerical data with many different values. Areas of rectangles (continues; no gaps between them) show frequency of classes of data. The graphical representation of continuous numerical data by way of bars to display the frequency of the items in the data set.
Horizontal bar graph	90° bar graph using horizontal bars to compare or rank items like household sizes in a block of flats.
Impossible outcome	No chance of the outcome happening e.g. getting a 7 with an ordinary six-sided dice.
Interview	Record data by talking to someone face to face or over the telephone.
Inter-quartile range	The difference between quartile 3 and quartile 1 OR The difference between largest quartile and the smallest quartile.
Investigate	Examine; look into; study
Likely/likelihood	Chance of something happening is greater than the chance of it not happening.
Line graph	A graph that uses line segments to connect data points and shows changes in data over time
Maximum value	The highest or biggest value in the data set.
Mean	Average of the values in a data set; sum of all the observed values divided by the number of observations.
Mean [of a set of data]	Average: sum of all data values divided by the number of data values.
Measures of central tendency	Numbers that tell more about the balance (middle values) in a data set (mode; median; mean).
Measures of spread	Numbers that tell how far data values in a data set lie apart; spread of numerical data set (range, quartile, and percentiles).
Median	Middle value in an ordered data set.
Median [of a set of data]	Value that cuts an ordered data set in half.

Methods of collecting data	Methods of collecting data is interview, observation and research or survey.
Minimum value	The lowest or smallest value in the data set.
Mode	Value or values appearing most often in a data set.
Mode of a set of data	Most common data value in a data set.
Multiple bar graph	A bar graph that displays two or more sets of data at once for easy comparison
Notation	System of figures/symbols to represent numbers, quantities or values.
Numerical data	The data that is given in the form of numbers.
Outcome	Result of a trial (experiment).
Outcome [fair]	All outcomes are equally likely to occur.
Outliers	Data value that lies an abnormal distance from the other data values in the data set. OR Extreme low or extremely high value in the data set. OR The item or value in the data set that differs significantly with other items or values
Percentiles	The points that divide the data set into 100 equal parts. Quartile 1 is the 25Th percentile i.e., the value at which 75% of the data set lies above and 25% of the data set lies below it. Quartile 2 Is the 50th percentile i.e., the value at which 50% of the data set lies above and 50% of the data set lies below it. Quartile 3 is the 75th percentile i.e., the value at which 25% of the data set lies above and 75% of the data set lies below it.
Pie Chart	A circular diagram that is divided up into different sections or sectors. A circle divided into sections illustrating the size for each category.
Population	Entire source of data involved in an investigation; all the subjects included in a study or survey in order to draw conclusions about that population as a whole.
Possible outcome	The chance that the event will happen or occur.
Prediction	Statement describing the chance of an outcome to happen based on given information.
Probability [mathematical]	Results of trial or experiment expressed as a fraction: number of favourable outcomes divided by number of all possible outcomes.
Probability [of an outcome]	Likelihood of a particular outcome occurring, expressed as a number between zero and one.
Quantitative data/ Numerical data	Data that can be measured and can be discrete or continuous.
Quartile	The values that divide a list of numbers into four equal parts.
Questionnaire	List of questions that can be used to collect data. An instrument consisting of questions for the purpose of collecting data.

Random sampling	The sampling method that allows every member of the population a chance of being included in the sample.
Range [of a data set]	Difference between the highest and lowest values in a data set. OR The difference between the maximum value and the minimum value in the data set.
Related [data sets]	Linked; connected.
Represent[data]	Draw; graph.
Representative sample	Sample likely to give results similar to those obtained from studying the whole population.
Sample	Subset (small group) chosen from the population to represent the population. OR The fraction of the entire group to be used in the collection of data
Sampling	Choosing a representative sample.
Scatter plot	A graph that is made by plotting ordered pairs in a coordinate plane to show the relationship between two sets of data, but the points are not connected by a line.
Sort	Put, organise into categories.
Stacked bar graph	(Also known as stacked bar charts) Instead of displaying a compound bar graph with bars side-by-side a stack bar graph divides the bar into segments. It is used to show how one bar is divided into smaller parts
Survey	Collect data from a group of people or objects.
Survey [biased]	Survey containing factors that produce answers that do not represent a truthful picture of the situation.
Tree diagram	Diagram using branches to display all the outcomes of a series of trials.
Trend	An upward or downward shift in the data set over time.
Two-way table	A contingency table representing all possible outcomes of two trials taking place together.
Un-grouped data	The data given as individual items or values.
Unlikely	Chance of something happening is less than the chance of it not happening.
Variable	A quantity that can take different values in a situation.
Vertical bar graph	90^0 bar graph using vertical bars to show change over time at discrete times like absentees per day for three weeks
Very likely	Chance of something happening is much greater than chance of it not happening.
Very unlikely	Chance of something not happening is much greater than the chance of it happening.
Account	A record of income and expenditure.
Balance	This is the difference between debits and credits.
Bank statement	The details of all the transactions made from one bank account in a given time

	period.
Billion	One-thousand million (one followed by nine zeros).
Break-even point	Break-even point is where the business is at an activity level (doing business) at which total cost = total sales, i.e. you have made enough income to cover the costs. At the break-even point, you are making neither a profit nor a loss; from that point on you will be making a profit with each sale (until new costs are incurred).
Budget	A plan of how to spend money. An estimate of income and expenditure.
Bursary	A sum of money given to you by an organisation to cover the cost of your formal studies.
Commission	The sum of money paid to an agent (usually a salesperson) that is a percentage of the total value of goods sold by the agent.
Compound interest	Interest charged on an amount due, but including interest charges to date
Consumption rate	The rate at which a commodity, such as water, electricity or fuel, is consumed.
Cost-effective	Best value for money.
Cost price	This is the amount that it costs per unit to either manufacture or purchase an item or to prepare for a service that will be delivered. This amount is pure cost, no mark-up or profit has been added yet.
Capital	Money that is owned by someone and used for the purpose of investing or lending.
Cost rate	The price of a product per mass, volume, length or time unit. Exchange rate The value of one currency relative to the value of another currency. Expenditure An amount of money that is spent on something.
Credit	This is an entry in an account that shows a payment made into the account.
Credit balance	The amount in the account is your own
Credit card	A credit card is a service bank product that allows you to buy goods and pay for them at the end of the month.
Credit limit	The maximum amount you can spend on your credit card.
Debit	When someone or an organisation takes money out of your account. An entry in an account showing a payment made from an account.
Debit balance	The amount owed to a lender or seller.
Debit order	It is an arrangement whereby you give permission to a third party to withdraw money from bank account on a regular basis.
Deposit	A payment made into a bank account.
Disposable income	Income that is left over after all payments have been made.
Exchange rate	The value of one currency relative to the value of another currency.
Expenditure	An amount of money that is spent on something.

Fine print	The legal terms and conditions printed on a contract applicable to a transaction or account.
Fixed deposit	A single deposit invested for a fixed period at a fixed interest rate.
Fixed expenses	These are amounts that must be paid every month and which stay the same, like rent, school fees and transport costs.
Fund	A source of money.
Gross income	The total amount of all an individual's income before deductions.
Hire purchase	Goods and products such as furniture can be purchased using a longer term lease or hire agreement (hire purchase); insurance is usually also added to the amount payable until it is paid off.
Inflation	An increase in the price of a basket of goods or services that is representative of the economy as a whole.
Interest	Money paid regularly at a particular rate for the use or loan of money. It can be paid to you by a finance organisation or bank (in case of savings); or it may be payable by you to a finance organisation on money you borrowed from the organisation.
Interest rate value	This is the % rate of interest that will be charged on your loan amount, i.e. a percentage value of the original loan amount.
Interest value	This is the actual rand amount of interest that will be added to your loan.
Investment	To put money into an organisation or bank (e.g., by buying shares), so as to gain interest on the amount at a higher rate. Or Something in which you have invested money.
Invoice	A comprehensive document that details all the work done or items sold, and what costs are due.
Lay-bye	It is a form of credit where the buyer pays a deposit and pays the balance in instalments while the shop keeps the item(s) until it has been paid off.
Loan	A loan is an agreed sum of money that is lent by a bank or moneylender (e.g. personal loan or home loan).
Luxury item or service	An item or service that is not essential for daily life, but which makes life easier or more convenient.
Net pay	The amount an employee "takes home" after income tax has been deducted.
Overdraft	An overdraft is an arrangement you make with the bank that allows you to draw more money than there is in your account.
PAYE	(abbr.) Pay as you earn: tax taken off your earnings by your employer and sent to the South African Revenue Service before you are paid (the balance).
Remittance slip	A piece of paper that accompanies a payment and contains the most important details of the transaction.
Salary	An amount of money paid for the work you do. (This is normally paid monthly.)

Selling price	This is the price at which something is offered for sale.
Simple interest	Interest charged on the original amount due only, resulting in the same fee every time.
Statement	A summary of transactions (debits and credits, or payments and receipts) made on an account.
Tariff	The rate charged for a service rendered, e.g. import duties, water consumption cost, etc.
Tax	A compulsory levy imposed on citizen's earnings or purchases to fund the activities of government.
Taxable	A service, purchase or item or earning that has tax applied to it.
Tax invoice	Printed record of what was bought, what it cost, what was taxable, the tax amount, method of payment, amount tendered, and change due, if any.
UIF	(abbr.) Unemployment Insurance Fund: A government-run insurance fund which employers and employees contribute to, so that when employees are retrenched they can collect some earnings (a portion).
Variable expenses	Expenses that change over time or from one week/month to the next. These are things that you usually pay or buy each month, but the amount changes e.g. telephone and electricity costs.
VAT	Value Added Tax (VAT) is a tax that is levied at 15% (currently in South Africa) on most goods and services, as well as on the importation of goods and services into South Africa.
VAT exclusive price	The price before VAT is added.
VAT inclusive price	The price after VAT is added.
Wages	A wage is an amount of money paid to an employee normally based on a fixed number of hours worked per week.
Withdrawal	Money taken out of a bank account.
Zero rated VAT items	These are goods that are exempt from VAT. Groceries that are basic foodstuffs are zero-rated in South Africa, e.g. brown bread, milk, mielie meal, samp, rice, etc..
2-D models	A diagram or picture having length and width only.
2-dimensional plans	A plan or design having length and width only, but possibly representing three dimensional objects.
3-D models	A dimensional construction of real-life objects.
Bar scales	Presented as a picture, it means that if you placed a ruler next to this scale, you could determine how many centimeters next to this scale, you could determine how many centimeters represent the specified kilometers

Compound bar graphs	Graphs that contain multiple bars for each category of data, with each bar representing a different component of each category of the data.
Elevation map	Information about the profile of a route as seen from the side.
Elevation plans	Show the design and dimensions of the outside of a building from a side view.
Floor plan	Shows the design and dimensions of the inside of a building, from a top view.
Highway	A major road that links major cities.
Line graphs	A diagram used to display data with a consistent trend.
Location:	A particular place or position.
Map:	A symbolic representation of selected characteristics of a place drawn on a flat surface.
Model:	A thing used as an example to follow and imitate an object (a three dimensional figure or object)
National road map	Shows major roads linking major cities to each other.
North elevation plan	Shows the side of the building that is in front of you when you are facing the compass direction 'North'
Number scale	A number scale such as 1 : 50 000 means that 1 unit on the map represent 50 000 units in real life
Scale	Determines how many times smaller an object shown on a plan or map is that its actual size
Scale drawing	A diagram of a real-life object drawn in proportion.
Scaled elevation plans	Show the design and dimensions of the outside of a building from a side view using a specific scale.
Map:	A symbolic representation of selected characteristics of a place drawn on a flat surface.
Street map	A map of a small area such as a town or city.
Strip map	A map of a section of a travelling route.
Route map	Shows a specific route, for instance for an event, as seen from above.
Area	The amount of two-dimensional space occupied by a2-D shape. The area of a shape is the size of its surface.
BODMAS	Brackets, of/orders (powers, squares, etc.), division, multiplication, addition, subtraction. A mnemonic (reminder) of the correct order in which to do mathematical operations.
Body mass index (BMI)	A number calculated from an adult's weight and height, expressed in units of kg/m^2
Breadth	How wide something is. From the word "broad".
Capacity	The amount of space available to hold something. OR A measure of the volume a hollow object can hold – usually measured in litres.
Circle	A closed cure that is everywhere the same distance from the middle point.

Circumference	Distance around a circle the perimeter of a circle.
Conversion	A change from one system / unit to another.
Cubed	The power of three; multiplied by itself three times.
Cubic	Shaped like a cube; having been multiplied by itself three times.
Cylinder	A 3-dimensional object with congruent parallel sides and bases are circles. A tall shape with parallel sides and a circular cross-section – think of a log of wood, for example, or a tube.
Degrees Celsius	Unit used to measure temperature in most countries.
Diameter	A straight line passing through the centre of a circle and touching the circle at both ends, thus dividing the circle into two equal halves.
Dimension	A measurable extent, e.g. length, breadth, height, depth, time. Physics, technical: the base units that make up a quantity, e.g. mass (kg), distance (m), time (s).
Distance	How far it is from one place to another, e.g. from one town to another or from one point to another point.
Growth Charts	Graphs consisting of a series of percentile cures that show the distribution of the growth measurements of children.
Imperial System	A system of measurement using inches, pounds, feet, gallons and miles.
Length	The measurement between two points, in a straight line, e.g. the length of a room.
Measure	Using an instrument to determine size, weight etc.
Measuring	Determine the value of a quantity directly, e.g. reading the length of an object from a ruler or the mass of an object from a scale.
Metric System	A system of measurement that uses metres, litres, kilograms, etc. A measurement system, using a base of 10 (i.e. all the units are divisible by 10).
Perimeter	The total distance around the boundary or edge that outlines a specific shape.
Pi	π, the Greek letter p, the ratio of the circumference of a circle to its diameter. A constant without units, value approximately 3,142
Radius	The distance from the centre of the circle to any point on the circumference of the circle.
Scale	An instrument that is used to measure the weight of an object.
Surface Area	The area of all the faces / surfaces of an object added together.
Volume	The amount of 3-D space occupied by an object. It is measured in cubic units.
Weight	An indication of how heavy an object is.
Event	An event is something that may or may not happen when an action is performed.
Outcome	This is the result of an event
Probability	The likelihood of something happening or not happening.
Experiment	Is a series of trials performed one after another.
Trial	Is an action which may lead to a result.

Possible outcome	is any of the possible results of a trial.
Favourable outcome	is any of the possible outcomes which favour a specific event.
Actual outcome	is the actual result of a single trial.
Frequency	The number of times that something happens.
Expected frequency of an outcome	is the number of times one expects the outcome to occur during an experiment
Actual frequency of an outcome	is the number of times the outcome actually occurs during an experiment.
Frequency of an event	Is the number of times that the event occurs during an experiment (a set of trials)
Relative frequency (experimental probability) of an event	is the number of times outcomes occur divided by the total number of trials. i.e. $$Experimental\ Probability = \frac{number\ of\ times\ the\ outcome\ did\ occur}{total\ number\ of\ trials\ (outcomes)}$$
Theoretical probability	is worked out as number of possible successful outcomes divided by total number of outcomes.i.e. $$Probability = \frac{number\ of\ successful\ outcomes}{total\ number\ of\ possible\ outcomes}$$
Sample Space	All the possible outcomes of an experiment.
Sample Point	Just one of the possible outcomes
Random	When something happens without being made to happen on purpose.
Fair	Treated equally, without having an advantage or disadvantage.
A fair game	Is a game in which there is an equal chance of winning or losing.
A fair coin	is a coin that has equal probability of falling on a "head" or a "tail" when it is tossed
Descriptions of the likelihood of an event occurring:	
Impossible	it has no chance of happening
Unlikely	it has a greater chance of not happening than of happening. it has as much chance of happening as of not happening.
Even (equally likely)	It is equally likely to happen as to not happen.
Likely	it has a greater chance of happening.
Certain	it is certain that it will happen.
Compound events	are two or more events happening at once.
Independent events	are events such that the probability of one event occurring in no way affects the probability of the other event occurring.
Dependent events	Events are dependent if the occurrence of either event affects the probability of the other.
Mutually Exclusive	means we can't get both events at the same time. (It is either one or the other, but not both)