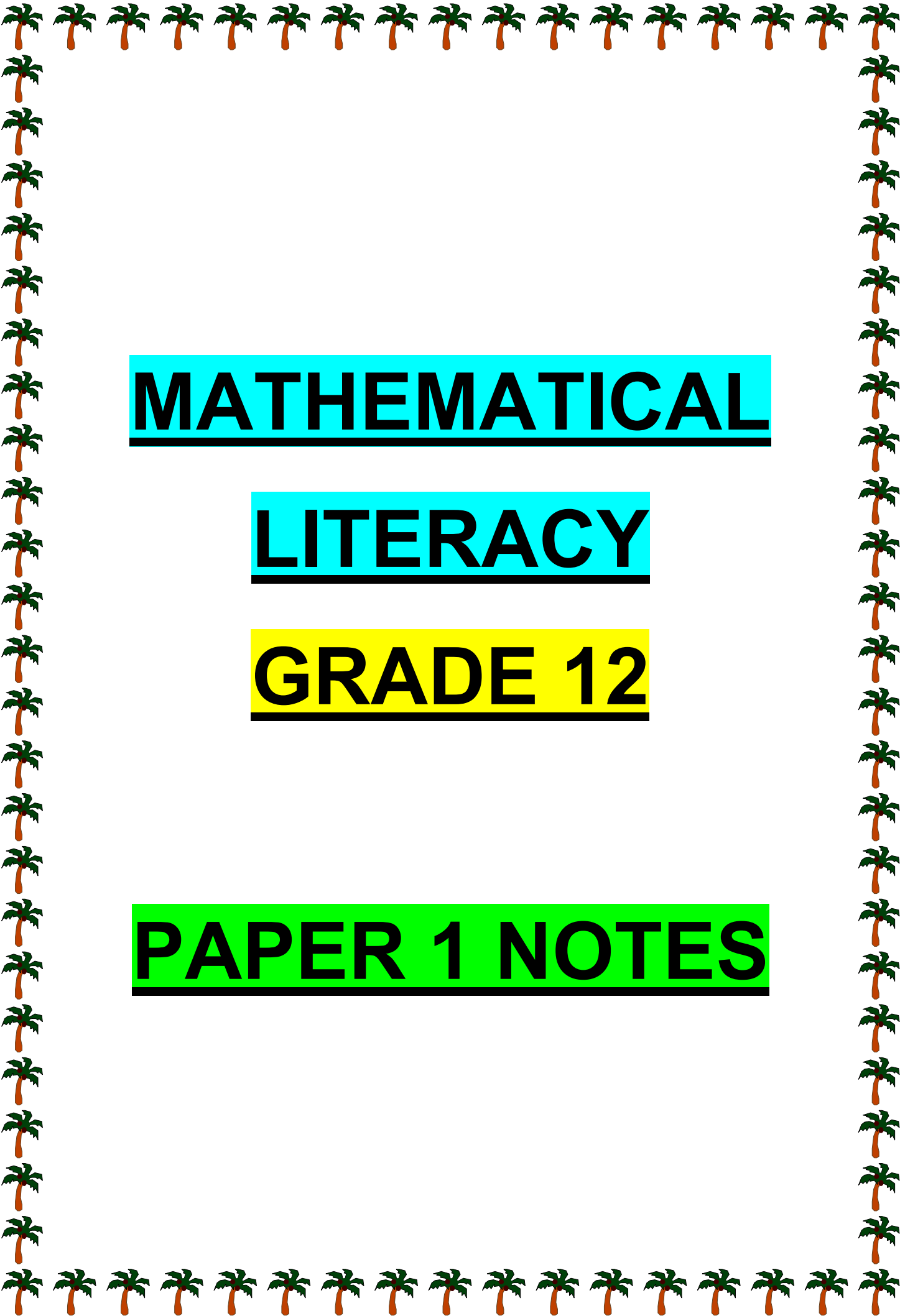


A decorative border of palm trees surrounds the text. The border consists of a top row of 15 palm trees, a bottom row of 15 palm trees, and two vertical columns of 15 palm trees each on the left and right sides.

MATHEMATICAL

LITERACY

GRADE 12

PAPER 1 NOTES

BASIC OPERATIONS OF MATHEMATICAL LITERACY.

- Quarter - $\frac{1}{4}$ Three quarters - $\frac{3}{4}$ Two thirds - $\frac{2}{3}$
- **Unit price** – price of 1 item (per and each).
- **Dozen mean** - 12 eggs.
- **Find annual** – multiply by 12
- **Find monthly** – divide by 12
- **Find difference** – you subtract (minus)
- **Find the sum** – you add.
- **Find total** – you add, if big (multiply)
- @ - you multiply numbers
- Given **a percentage % and number** = multiply both to find the value.
- Question asking **VAT** use these ratios (**15%, 115%, 100%**)
- **Probability** – Start from Fraction, decimal or percentage.
- **Probability** = $\frac{\text{chances}}{\text{total}}$
- Answers always take THREE digits and **ROUNDED OFF 2 DIGITS** unless stated otherwise.
- **Ratio** – example (5000: 1500) always simplify your ratio by dividing the numbers on the calculator and get a fraction change it to ratio. Eg (5000: 1500) will be $\frac{10}{3}$ which is 10:3.
- **Unit ratio** – (1: something)
- **Percentage change(increase)** = $\frac{\text{New-old}}{\text{old}} \times 100$, if its negative it a percentage decrease.

- Find the **increase in two numbers** (you subtract).
- To prove how many times something over another- you divide the values given.
- **To prove something is more than or less than by amount. Eg**
prove that the income is more than an expense by 45. You must get an income, then get an expense. (You will always do TWO calculation). Lastly you subtract the two answers.

KEY WORDS	ABBREVIATIONS
<u>Identify</u> – give a name <u>Write/State</u> – Bhala (awubali) <u>Calculate/Determine</u> – Uyabala. <u>Explain/Describe</u> – Chaza <u>List/Name</u> – usho igama. <u>How many</u> – number <u>How long</u> – time but depends on the question sometimes. <u>Show that</u> – answers must be the same exactly. <u>Show if or whether(verify)</u> – answers may not be the same. Then you conclude. Conclusion, use words used on the question.	VAT – Value Added Tax UIF – Unemployment Insurance Fund GEPF - Government Employee Pension Fund PAYE – Pay as you earn SARS – South African Revenue Services BMI – Body Mass Index ATM – Auto Teller Machine EFT – Electronic Fund Transfer

TAXATION

STEPS TO CALCULATE THE INCOME TAX OF A PERSON.

1. Gross annual (yearly) income. Multiply by 12.
2. Subtract (pension and donations)

Taxable income = Annual Income – tax deductible income

3. Choose the correct tax bracket using step 2.
4. Subtract the rebate.
5. Subtract medical aid
6. Annual Tax
7. monthly tax, divide by 12.

What is meant by tax?

- It is a compulsory contribution to government income, charged on the workers' income and business profits, or added to some goods, services, and transactions.

Tax is separated into TWO parts:

- Value added Tax (VAT)
- Personal income tax.

Why do we pay tax?

- To provide funds for government programmes, e.g to provide public goods and services like healthcare; schools; roads, hospitals, social grants etc.

Who pays tax?

- VAT is paid by everyone who buys goods or pays for services rendered, however some goods are exempted from tax e.g., Fresh fruit; brown bread etc.
- Personal income tax is only paid by individuals who earn above a certain amount of money (as determined by the government from one year to the next)

VAT Exemption:

- Some products or services may not be taxed. This means that there is no VAT charge for them otherwise referred to as **VAT exempted (zero rated goods)**.
- Supply of donated goods by a charitable organisation.
- Some basic food items e.g Fresh fruit; brown bread etc.

VAT (Value added Tax)

- **VAT** is a tax charged at 15% on most goods and services, as well as on the importation of good and services into South Africa.
- VAT is currently calculated at 15% of the value of the goods/services.
- **VAT inclusive** means price with Vat added - **115%**
- **VAT exclusive** means price with **NO** Vat - **100%**.

UIF- UNEMPLOYMENT INSURANCE FUND.

- UIF stands for “Unemployment Insurance Fund”. It serves as a form of insurance, if **YOU LOSE YOUR JOB, dismissed or retrenched.**
- You **DO NOT** get UIF when you **retire or resigned.**
- The employee (1%) and the employer 1% combined being 2% which goes to the **SARS department.**
- The **UIF ceiling price** of people who earns more than **17 712 is R177,12 (1%).**
- 1% must be take on the gross (all incomes) income of an employee.
- Do not calculate UIF on commissions (sales made).
- It is the employer’s responsibility to make sure that their employees are registered for UIF.
- An employee must work for more than 24 hours a month to qualify to pay UIF.

Benefits of Paying UIF

- Unemployment benefit
- Sickness benefit
- Maternity benefit

Pension fund. (GEPF)

- Government Employees have GEPF while Private Sector has a Provident Fund. **7,5% (basic salary)** is contributed towards a pension fund.
- It should be multiplied by 12 to give the annual contribution.
- **Pension is NOT deducted on bonus.** You get it when you RETIRE.

INCOME TAX

- Every person in South Africa who is employed and earns a certain minimum amount, has to pay tax on his or her income. The tax on income is calculated as a percentage of the income.
- This amount is paid to the **South African Revenue Services** (SARS) and can be deducted from taxpayer's salary every month (**PAYE**) - Pay as You Earn.

IMPORTANT THINGS TO KNOW.

- **Gross income** - The sum of all earnings (basic salary, travel allowance, housing) before any deductions have been made. Monthly gross x 12 to get annual.
- **Tax deductible**
 - 1) **Pension fund.**
 - 2) **Donation** – maximum amount allowed for tax deduction is R100 000.

Threshold Tax

- Persons earning more than the tax threshold are liable to pay tax. Anyone who earns less than this amount does not have to pay tax. This amount is determined by the government every year.

TAX THRESHOLD 2020/2021	
Below age 65	R83 100
Age 65 to below 75	R128 650
Age 75 and older	R143 850

Example: A person who is 60 years old and earns less than R83 100 does not have to pay tax. Check the threshold by the taxable income.

- **To prove the tax threshold values you divide the rebates by 18%.**
- **Second threshold, you add the rebates and divide by 18. Same thing to the 3rd threshold.**

REBATES

- It is the relief/refund individuals who pay tax get according to their age. Rebates are fixed amounts deducted (taken off) from your annual tax payable.
- Under 65 qualifies for the **PRIMARY** rebate.
- People 65 and over qualify for the **PRIMARY** and **SECONDARY** rebates.
- People 75 and over qualify for the **PRIMARY**, **SECONDARY** and **TERTIARY**.

- If **rebates increase (do not add them)**
- If the **rebates decrease (add them).**
- To prove the rebate values, you multiply threshold by 18%.
- For a secondary rebate (secondary threshold - primary) x 18%.
- For a tertiary rebate (tertiary threshold - secondary) x 18%.

MEDICAL TAX CREDITS

- Medical tax rebates are received by the main member (The person who pays the medical aid).
- The medical tax credit allocated for the **first dependent equals that of the main member(most cases)** every member thereafter has the same different medical tax credit. You as member included.
- It must be annual meaning you multiply by 12.

INFLATION

- **Inflation** is an increase in the price of a variety of goods and services over time and different times have different inflations rates.
- Inflation is usually measured as an annual percentage increase.
- To find the new price – use ratio.

$$\text{Inflation rate} = \frac{\text{new price} - \text{old price}}{\text{old price}} \times 100$$

HIRE PURCHASE AGREEMENT

- Most people don't have the cash up front to purchase items such as TVs, fridges, coaches etc., so they buy them on a hire purchase agreement.
- A **hire purchase agreement** is therefore a financial agreement between the shop and the customer about how the customer will pay for the desired product.
- The interest on a hire purchase loan is always charged at a **simple interest rate** and only charged on the amount owing after paying the deposit.
- The **total loan amount** is then divided into monthly payments over the period of the loan. Payment period is usually 12, 24, 36, 48, 60, and 72 months.

EQUATIONS.

- **Loan amount = cash price - deposit.**
- **Monthly payment** $= \frac{\text{loan amount}}{1000} \times \text{loan factor}$
- **Real cost loan = Monthly repay x no of instalments**
- **Interest = Real cost – loan amount**
- **Total cost loan = real cost + deposit + any fee.**

SIMPLE INTEREST	COMPOUND INTEREST
• Use $SI = PIN$ • Use the initial amount to generate interest. • Good on loans • Bad on investments	• Table method • Use the current amount to generate interest. • Bad on loans • Good on investments.

TERMINOLOGY

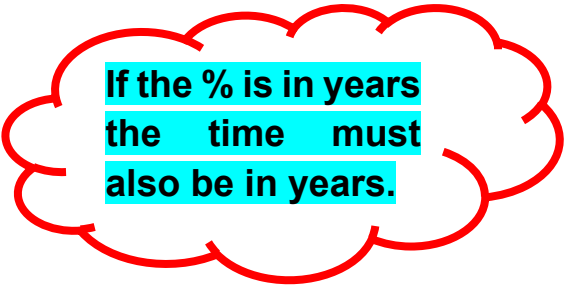
- ❖ **Investment** – money placed on the bank or organisation.
- ❖ **Loan** – money borrowed from the bank or loan shark.
- ❖ **Interest** – the amount charged on a loan or investment.
- ❖ **Interest rate** – is the percentage rate of interest that would be charged on the loan or investment.
- ❖ **Principal** – original or initial amount.
- ❖ **p.a** - per annum – year.

In compound interest, interest can be compounded:

- Ø Daily (divide by 30)
- Ø Monthly (divide by 12)
- Ø Quarterly (divide by 4)
- Ø Half yearly/bi annually/semi-annual (by 2)
- Ø Annually/yearly (use as it is)

EQUATIONS

- **Total** = Interest + original
- **Interest** = Total – original amount
- **Original** = total – interest



**If the % is in years
the time must
also be in years.**

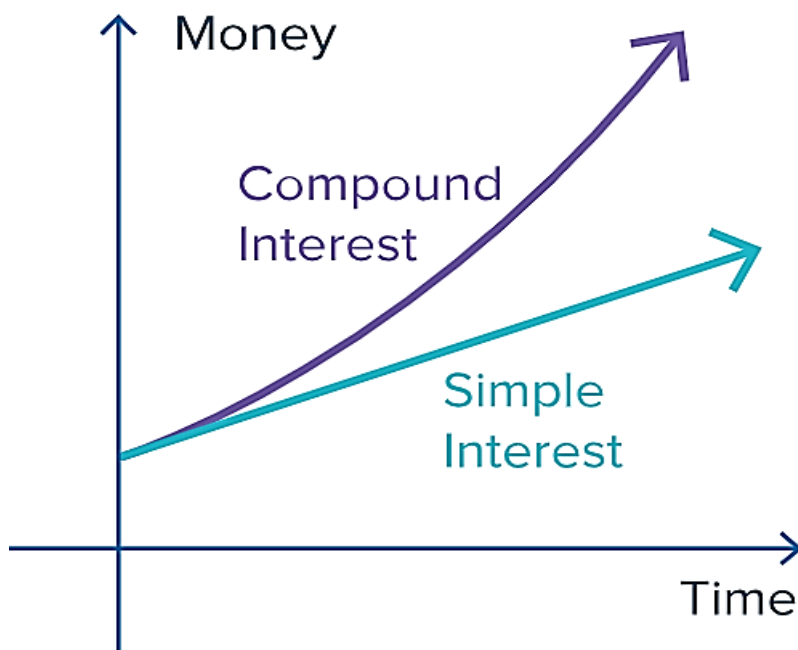
- ❖ When the question says compounded half yearly(etc) you divide the interest rate (%) by 2, also year 12 months by 2. Meaning the amount generate the interest two times a year.

Example 1: Calculate the **total amount** of money to be received after a year, if R5000 was invested at **R5000** compounded **quarterly** at **8%** per annum.

Solution:

$$\frac{8}{4} = 2\% \quad \frac{12 \text{ months}}{4} = 3$$

Year	Month	Principal	Interest	Total
1	3	5000	$\frac{2}{100} \times 5000 = 100$	$100 + 5000 = 5100$
	6	5100	$\frac{2}{100} \times 5100 = 102$	$102 + 5100 = 5202$
	9	5202	$\frac{2}{100} \times 5202$ $= 104.04$	$104.04 + 5202 = 5306.04$
	12	5306.04	$\frac{2}{100} \times 5306.04$ $= 106.12$	$106.12 + 5306,04 = \text{R5412.16}$



GRAPHS OF THESE INTEREST.

Simple interest

- Straight line graph

Compound interest

- Curve graph

TYPES OF FINANCIAL DOCUMENTS.

- **Statement** – Is a financial document with details of financial activities over a specific period.
- **Tax Invoice** - Is a financial document that you get with the details of the product you buy after buying it.
- **Quotation** - Is a financial document provided by the seller showing the estimated costs for the goods and services.
- **Payslip** - Is a financial document provided by the employer to the employee showing employees earnings.
- **Till slip** - Is a financial document that you receive with details of the products you bought.

IMPORTANT thing to look for on financial documents:

- Name and address of the owner of the statement and the address where it comes from. (don't confuse the two)
- Account numbers and contacts. eg cell phones, emails.
- Date of statement released. Date of amount due to pay.
- VAT (15%) and Discount (%) if there is any.
- Amount due to be paid.
- Credit limit (maximum amount you can spend)
- Debit, credits, stop orders, debit orders.
- Opening, closes balance, balance bought forward.
- Identify the type of an account of financial document.

TYPES OF BANK ACCOUNTS

- **Debit account (with debit card):** Debit cards can be used to pay for purchases. When it's swiped, money is deducted from the account. Credit is not available on this account
- **Savings account:** A bank account that earns interest. You can use a savings account for short – term saving.
- **Fixed deposit account:** This account is aimed at those who have a lump sum they want to invest over a fixed period of time (i.e., a medium or long-term saving). Interest is also earned on the investment
- **Cheque or current account:** A bank account that is used to deposit and withdraw money by visiting the bank branch, using an ATM or Internet banking or by writing a cheque. These are usually available to people who earn a regular income
- **Credit account (with credit card):** An account either with a store or bank, that allows the account holder to purchase items now and pay for them later.

TERMINOLOGY

- + **Credit limit** - the maximum amount that a bank or other financial institution will allow a client to borrow/use.
- + **Debit balance** - the amount that you owe the bank for transactions made with borrowed money.
- + **Credit balance** - the amount in the account that is yours.

- + **Opening and closing balance** -The amount of money in the account at the beginning and the end of the period.
- + **Transaction** - Any event where money moves into or out of an account.
- + **Debit transaction** - Amount of money paid out of an account.
- + **Credit transaction** - Amount of money deposited into an account.
- + **Debit order** – An agreement giving the 3rd party permission to withdraw money from the bank account on a regular basis.
- + **Stop order** - An agreement giving the bank permission to withdraw money from the bank account on a regular basis.

BANK FEES.

- A cost paid for transaction or service rendered by the bank.
- Per and part thereof eg. R1.20 per R50. Meaning the bank charges R1.20 for every R50.
- **ATM** – Auto Teller Machine. **Branch** - inside the bank.
- **Electronic Fund Transfer** – Transferring funds through a cell phone or bank app.

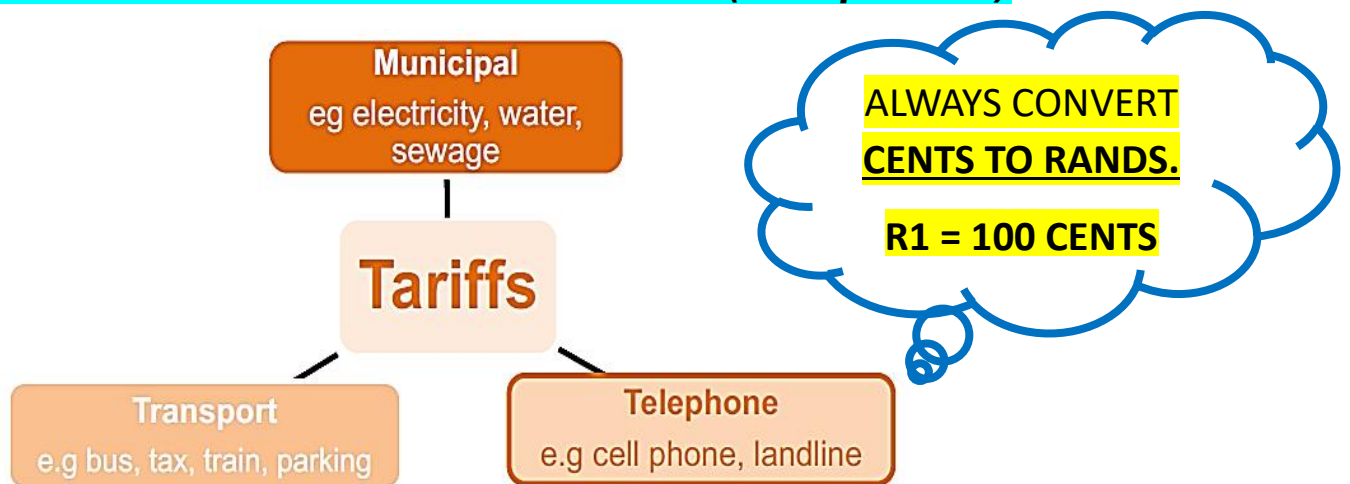
ADVANTAGES OF USING ONLINE BANKING.

- Easy access to your account anytime anywhere.
- Saves money and time without visiting the branch.
- Prevent crime, for safety measures.
- Reduces paper statements, minimize branch visits.

TARIFFS.

- **A tariff** is the **charge** in rands per measuring unit for a specific service. Tariffs are not always constant; they change from time to time.

Total cost = number of units × tariff (cost per unit)



Reason why using a sliding scale or the first units are free:

- To minimise the usage of water/electricity.
- To accommodate even the people who earn less who cannot afford since it is a basic need.

WAYS TO SAVE WATER	WAYS TO SAVE ELECTRICITY
• Bath once a day. • Use a bucket not pipe when washing a car. • Use a bathtub not a shower. • Close the tap when brushing your teeth.	• Cook once a day. • Switch off the light when sleeping. • Always switch off the plugs if not in use.

Things that increase the COST of electricity in Winter.

- Using appliances like heaters to make ourselves warm.
- Turning the lights on early.

Basic Charge is important for:

- water supply in the community.
- For water connection.

Steps on how to calculate costs of units tariffs:

- Check If your cost is in rands or cents.
- Check if the cost is Vat exclusive or Vat inclusive.
- Find the units in bracket to find the cost.
- At the add the basic charge (service, fixed charge if ikhona)

REVERSE CALCULATION.

Given the amount of money to find the units used.

1. Check if the price you given if it vat inclusive or vat exclusive.
2. If not make sure the price given matches the table in term of vat.
3. Find the total cost of all brackets.
4. Start subtracting the cost of bracket from the price given.
5. When you can no longer subtract divide the price left with the cost of units for on the bracket you are on.

INCOME AND EXPENSES:

- **Income(revenue)** is the amount of money that earned (comes into the account), while.
- **Expenses (cost)** is the amount of cost to achieve a particular service/product.
- Income and expense statements allow us to keep track of our finances. This shows exactly how much money comes into or leaves your business or account.

Fixed vs Variable Expenses/Income

- **Fixed** - expenses that do not change. Salary, Rent.
- **Variable Expenses:** Changes from time to times. (Profit from selling)
- **Occasional (irregular) expense** – Usually comes once in a year. Does not usually happen. eg birthday gift, bonus.

BUDGET STATEMENT

- **Budget** - refers to a planned(estimated) amount of money allocated for a specific purpose. It is a plan.
- **Actual** – refers to the real final amount of money spent or received. Amount in reality
- The importance of drawing a budget is that it statements allow us to keep track of our finances.
- Budgets are important tools for planning the *future finances* of an event, business or organisation.

PERSONAL INCOME	BUSINESS INCOME
• Salaries & Wages • Bursaries • Pocket money & gift • Inheritance • Interests on investments	• Donations • Grants • Interest on investments • Profit • Income from sales

PERSONAL EXPENSES	BUSINESS EXPENSES
• Food, clothing, entertainment • Accounts (water, electricity, clothes, cell phone) • Fees (school fee, bank fees) • Insurances (car, household, medical, funeral) • Personal taxes	• Insurances • Rent & electricity • Salaries • Telephone bill • Transport • Materials or Ingredients • Operating Machines

PROFIT (SURPLUS)

- Profit is when the income is more than an expense. Money left after covering all expense.
- It is positive when displayed on the table.

LOSS(DEFICIT)

- Loss is when income is less than an expense.
- It is shown in bracket

EQUATIONS

- Profit /Loss = Income – Expenses
- Profit/loss = Selling price – cost price
- Selling price = Cost + profit
- Cost price = selling price – profit
- Profit Margin = $\frac{\text{Profit}}{\text{Income}} \times 100$
- Percentage profit (Mark up) = $\frac{\text{Profit}}{\text{cost price}} \times 100$

Writing two equations for Income and Cost (expense)

Income = selling price x n (1 item)

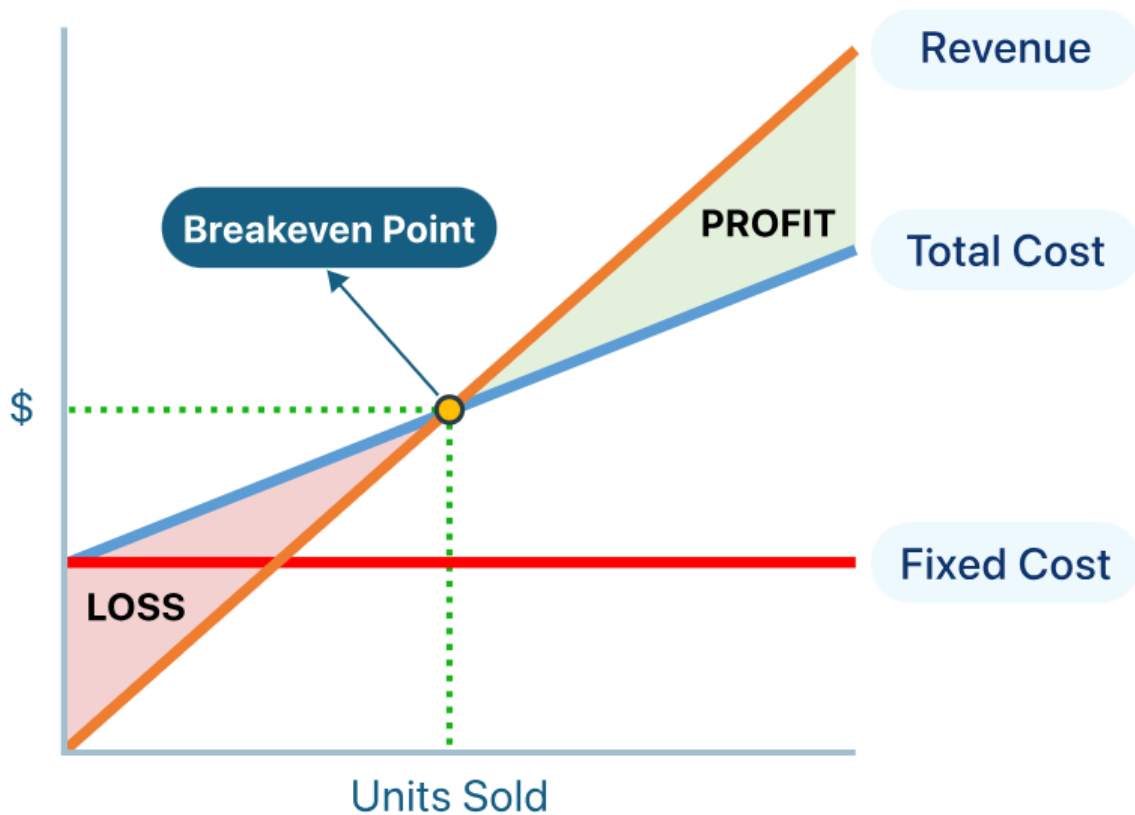
Expense = Fixed + cost of the item x n

- ✓ Fixed cost – rent, electricity, water, transport any other cost.
- ✓ Cost of an item – cost to make **ONE** product.

BREAK EVEN POINT

- Is a point where the income is equal to the expense.
- It is a coordinate of (x, y).
- **Income graph** must start on the origin (0,0) and the **expense graph** must start on the **fixed cost**.
- Title for your graph.

BREAKEVEN CHART



EXCHANGE RATES

- **Exchange rates** is described as the price at which one currency can be purchased with another currency.
- There are strong and weak currencies.
- The **bigger the value, the weaker** the currency is. (Ratio for calculations)
- Eg \$1 = R20, the Rand is weaker, has bigger value.
- If the Rand decrease it becomes strengthen or stronger,
- eg \$1= R20 and changes to \$1= R15, the Rand is getting stronger when it is R15 cause you pay less for same dollar.
- The **buying power** is a measure of the value of money in terms of quantity that it can buy.
- Eg, \$1= R20, with R20 in South African you can buy an apple, banana, niknaks and a sticksweet but the same R20 in USA will be \$1 which in USA you can get like one item.
- Therefore, **\$1 has more buying power since it will change to R20 in South Africa.**
- Therefore, **stronger currencies have more buying power.**

NB: The most important part is to **READ THE TABLE** with understanding.

CURRENCY	UNITS PER ZAR	ZAR PER UNIT
Euro	0,060673	16,480
British pound	0,050862	19,662

R1 = €0,06073

€1 = R16,480

Name	Symbol	Continent	County
Euro	€	Europe	German, France, Italy
Pounds	£	Europe	United Kingdom
Dollars	\$	America	Canada, United states.
Yen	¥	Asia	Japan
Yuan	¥	Asia	China
ZAR	R	Africa	South Africa Rand
Zimbabwean	Z\$	Africa	Zimbabwe
Pula	P	Africa	Botswana

DEVELOPING QUESTIONS.

- **Population** is the **entire group** on which data is gathered and analysed.
- **Sample** is the **small group** chosen from the population to represent the population.
- **Raw data** – data as originally collected before any sorting has been done.
- **Class** - the range of possible data values grouped together.
- **Tally** – a mark(I) that shows one count of data.
- **Frequency** is the numbers of times a situation occurs.

Data can be collected by the following three methods.

1. **Surveys** (ask a yes/no question)
2. **Observation** (by watching and recording people)
3. **Interviews** (ask deep and long answers)

METHOD	SURVEY	OBSERVATION	INTERVIEW
INSTRUMENT	Questionnaires	Tape, recorder.	Recording sheet
ADVANTAGE	- Can be completed in own time - Can complete in privacy.	- Affordable - Quick - Can sort data easily	- Can explain questions - Can note responses in a consistent fashion.
DISADVANTAGE	- Expensive - Possible low response. - Participants can misinterpret questions.	- Can easily record data. - Time can influence sample.	-Interview is expensive -Time consuming.

TYPES OF QUESTIONS

- **Open-ended questions** – not strict can give your own thought.
- **Closed questions** – limit the participants answers. Eg yes or no questions. Multiple choice, scaled numbers.

DATA CAN BE CLASSIFIED INTO TWO TYPES.

1. **Categorical** - Qualitative data (word, names, colour, place, gender)
2. **Numerical** - Quantitative data (deals with values/numbers)

NUMERICAL DATA CAN BE FURTHER CLASSIFIED INTO:

1. **Discrete data** - (counted data, fixed values) Eg people, money, number of apples, age
2. **Continuous Data** - (measured, decimals) eg height, mass, weight, temperature.

STATISTICAL CYCLE STEPS

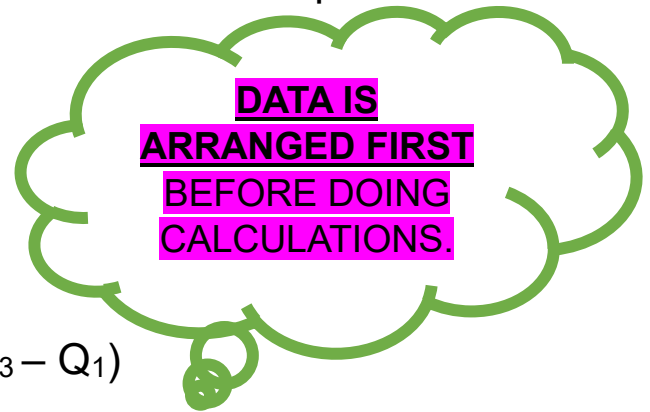
1. **Pose the question** – Define the problem, question.
 2. **Collect data** - collect data using the instrument tools.
 3. **Display data** – using charts and graphs
 4. **Summarise data** – mean , mode, pattern and trends.
 5. **Organise data** – grouping and categorizing data.
- ✓ **Ascending Order** – arranging numbers from smallest to biggest.
 - ✓ **Descending order** – arranging numbers from the biggest to the smallest.

MEASURE OF CENTRAL TENDENCY

- **Median** (Q_2 - middle 50%) Number found in the middle.
- **Mean** – add all the values divide by the total of numbers.
- **Mode** – the number that appears the most frequent.

MEASURES OF SPREAD

- **Range** = Max – Min
- **Lower quartile** (Q_1 - 25%)
- **Upper quartile** (Q_3 - 75%)
- **Interquartile range** ($IQR = Q_3 - Q_1$)

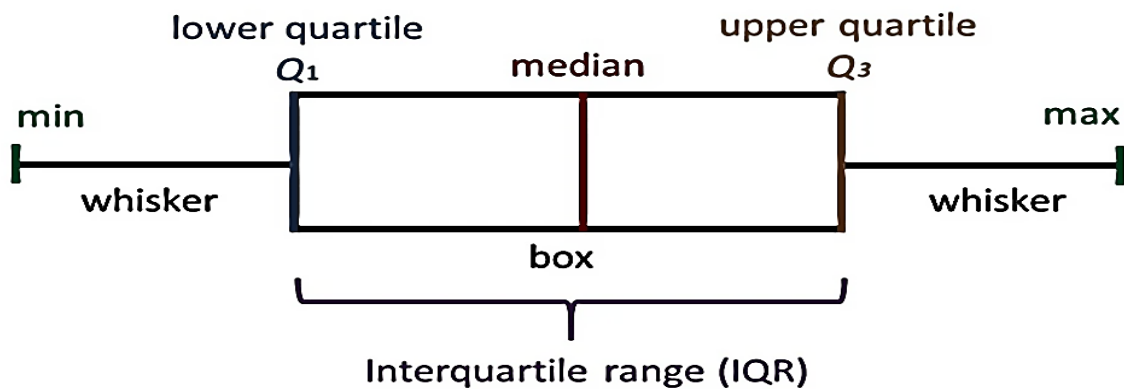


ADVANTAGES AND DISADVANTAGES

MEASURE	ADVANTAGE	DISADVANTAGE
Mode	Resistant to outlier. Cannot be affected by outliers	Hard to interpret if there is multiple modes.
Median	Resistant to outlier. Cannot be affected by outliers	Number has to be arranged first.
Mean	Can give you a clear picture of the data. Take all values into account.	Can be affected by the outlier.
Range	Rapid understanding of data spread.	Can be affected by the outlier.
Outlier	Indicates potential errors.	Can affect the mean and range.

Interquartile range is good for interpreting the data because it cannot be affected by the outlier compared to using the range.

BOX and WHISKER DIAGRAM



- **Outlier** – single value that is far of average values.
- **Five Number Summary** – Min, Q₁, Q₂, Q₃, Max.

QUARTILES

Even data Arranged: 13, 15, 18, 20, 25, 27, 31, 34, 39, 80

$$\begin{aligned}\text{a) Median}(Q_2) &= \frac{25+27}{2} \\ &= \frac{52}{2} \\ &= 26\end{aligned}$$

b)

13, 15, 18, 20, 25,	27, 31, 34, 39, 80
Lower quartile (Q ₁)	Upper quartile (Q ₃)
Q₁ = 18	Q₃ = 34

$$\begin{aligned}\text{c) IQR} &= Q_3 - Q_1 \\ &= 34 - 18 \\ &= 16\end{aligned}$$

CALCULATIONS

1, 10, 8, 4, 7, 9, 3, 4, 3, 2, 5, 4, 10

Odd data Arranged : 1, 2, 3, 3, 4, 4, 4, 5, 7, 8, 9, 10, 10

d) 1, 2, 3, 3, 4, 4, 4, 5, 7, 8, 9, 10, 10

Mode = 4

e) **Median** = 4

1, 2, 3, 3, 4, 4, 4, 5, 7, 8, 9, 10, 10

f) **Mean** =
$$\frac{1+2+3+3+4+4+4+5+7+8+9+10+10}{11}$$

$$\begin{aligned}\text{Mean} &= \frac{70}{11} \\ &= 6.36\end{aligned}$$

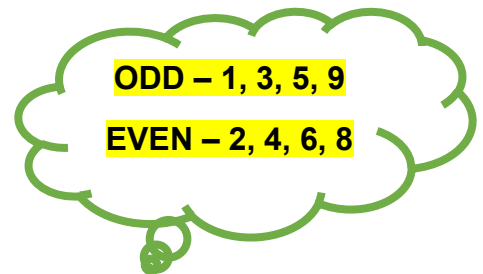
g) **Range** = $10 - 1$
= 9

h) **Outlier** = None.

PROBABILITY

- Likelihood or chances of an event to happen.
- An event is one or more possible outcomes in which you are interested.
- An outcome is a result of an experiment.

$$\text{Probability} = \frac{\text{chances}}{\text{total}}$$



PROBABILITY (WORDS)

- Certain
- Very Likely
- Likely
- Even (fifty - fifty)
- Unlikely
- Very unlikely
- Impossible

EXAMPLES:

- A person next to you is 90 years old.
- Tomorrow will likely rain.
- You will get pregnant at the age of 30.

PROBABILITY (NUMBERS)

- Fraction - $\frac{1}{2}$
- Decimal – 0,5
- Percentage - 50%

A bag has 20 balls which are, 6 red, 9 blue, 3 yellow, 5 black, 2 green.

The probability of picking a blue ball? $\frac{9}{20}$

The probability of picking a black ball? $\frac{5}{20}$

The probability of picking a blue or red?

$$\frac{9+6}{20} = \frac{15}{20}$$

The probability of a green & blue? **0.**

The probability of picking a white ball? $\frac{0}{20}$

TWO PROBABILITY DIAGRAMS

- Tree diagrams
- Two-way Table

TWO WAY DIAGRAM

The following diagram represent the number of learners and the specific subject they chose.

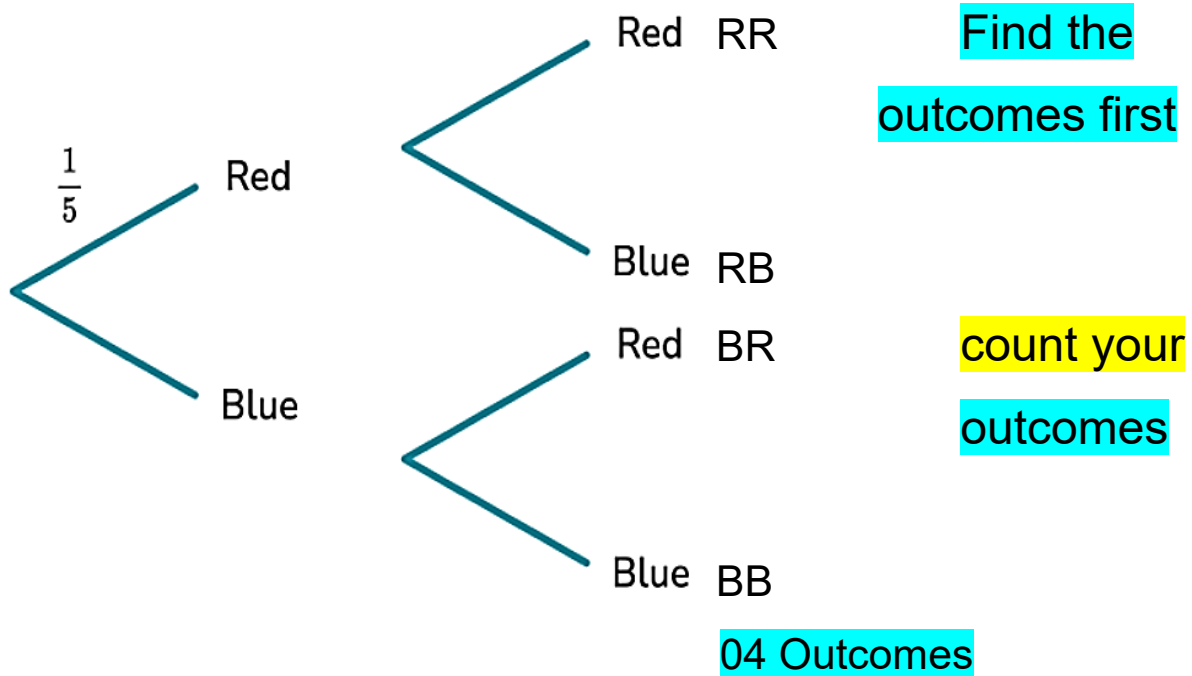
	LIFE SCIENCES	PHYSICAL SCIENCE	HISTORY	TOTAL
GIRLS	45	29	17	91
BOYS	23	31	55	109
TOTAL	68	60	72	200

Sample size (total number of learners)

QUESTIONS

1. How many learners were involved in the data collection?
 - 200
2. What is a probability of randomly choosing a learner that chose History? $\frac{72}{200}$
3. What is a probability of randomly choosing a learner that chose Life science? $\frac{68}{200}$
4. What is a probability of randomly choosing a boy that chose physical science? $\frac{31}{109}$
5. What is a probability of randomly choosing a girl that chose History? $\frac{17}{91}$

TREE DIAGRAM



QUESTIONS

1. What is the probability of picking 2 red balls? $\frac{1}{4}$
2. What is the probability of picking balls of the same colour?
 $\frac{2}{4}$
3. What is the probability of picking a blue and a red ball? $\frac{1}{4}$
4. What is the probability of picking balls blue and red ball in any order? $\frac{2}{4}$

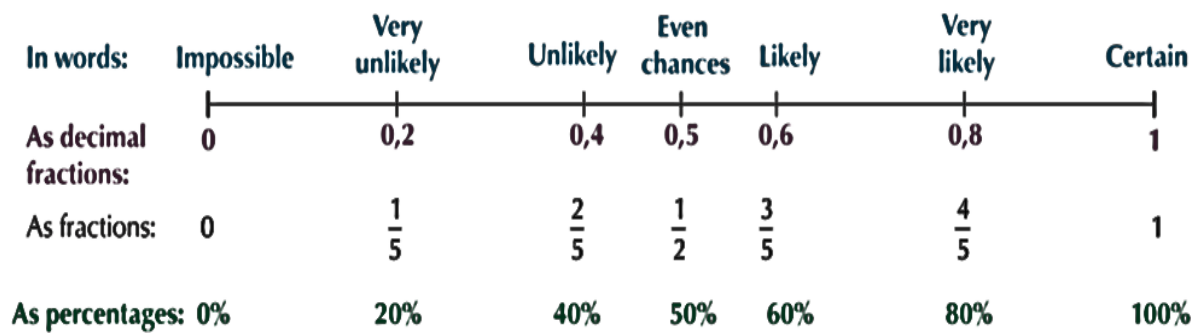
SUM OF TWO DICE

Dice	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

COMBINATION OF 2 DICES

Dice	1	2	3	4	5	6
1	1;1	2;1	3;1	4;1	5;1	6;1
2	1;2	2;2	3;2	4;2	5;2	6;2
3	1;3	2;3	3;3	4;3	5;3	6;3
4	1;4	2;4	3;4	4;4	5;4	6;4
5	1;5	2;5	3;5	4;5	5;5	6;5
6	1;6	2;6	3;6	4;6	5;6	6;6

Likelihood scale



TERMS	DEFINITIONS
Tax	It is a compulsory contribution to government revenue, charged on the workers' income and business profits, cost of goods, services etc.
Rebate	It is the tax relief for people paying tax according their age.
Tax Threshold	The minimum annual amount of money a person must earn per year according to their age.
VAT	Is a tax charged at 15% on most goods and services, as well as on the importation of good and services into South Africa.
Vat inclusive	It is a price with Vat added.
Vat exclusive	It is a price with no vat added.
Gross Income	The sum of all earnings before any deductions have been made.
Net salary	It is the income received after deductions. Also known as Disposable income.
Employee	A person who works for a company or organisation and paid for the work they do.
Employer	A person who hires employees to perform a specific task or roles.
Wage	An amount of money paid for the work you do based on the hours worked per week.
Salary	An amount of money paid for the work you do monthly.
Tariff	The rate charged for a service rendered.

Basic Charge	A fixed cost that is applied to a service or product regardless of their usage or consumption.
Break even	Is when the income is equal to the expense.
Selling price	The price at which at which an item is offered with profit included.
Cost price	The amount that it cost per unit to manufacture or purchase an item.
Profit (surplus)	If the income is more than the expenses. Also described as money left after paying all your expense.
Loss(deficit)	If the income is less than the expenses.
Expense	Cost of a service or product.
Hire Purchase	a financial agreement between the shop and the customer about how the customer will pay for the desired product.
Inflation	A general increase of prices of goods and services over a period of time.
Exchange rate	The value of one currency relative to another currency.
Currency	A system of money that is used as a medium of exchange within a particular country.
Opening balance	Amount of money in the beginning of the month that you owe/have.
Closed balance	Amount of money at the end of the month that you owe/have.

Balance Brought forward.	Amount of money carried over from the previous month that you owe/have.
Debit	An entry in the account that shows a payment taken out of the account.
Credit	An entry in the account that shows a payment made into the account.
Debit order	An agreement giving the 3 rd party permission to withdraw money from the bank account on a regular basis.
Stop order	An agreement giving the bank permission withdraw money from the bank account on a regular basis.
Loan	An agreed sum of money that is lent by a bank or money lender.
Interest	Money paid regularly at a particular rate for the use or loan of your money.
Interest rate	This is the percentage rate of the interest that would be charged on your loan.
Simple interest	Interest charged on the original amount due only, resulting in the same fee every time.
Compound interest	Interest charged on an amount due but including interest charges to date.
Sample	Small group chosen from the population to represent the population.
Population	The entire source of data involved in the investigation.

Mean (average)	Sum of all data values divided by the number of data values
Mode	Value or values that appear the most frequent in the data set.
Median	Middle value in the ordered data set.
Range	Difference between the highest and the lowest values in the data.
Categorical data	The data that is given in the form of words, names or labels. Qualitative data.
Continuous data	The data that is given in numbers including the decimals numbers or fractions. Data that can be measured like weight
Discrete data	Data that can be counted. Usually fixed, whole numbers.
Box and whisker	Visual representation that shows five number summaries.
Quartile	The values that divides a list of numbers into four equal part.
Probability	Likelihood or Chances of an event to happen expressed as number from 0 to 1.
Outcome	The result of the event
Tree diagram	Diagram using branches to display all the outcomes of trials.