GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

REMOTE LEARNING ACTIVITY BOOKLET

(RELAB)
SUBJECT: MATHEMATICAL LITERACY
GRADE: 10

LEARNER GUIDE

2-D Shapes

AREA OF 2D FIGURES

Trapezoid (US)
Trapezium (UK)
Area = ½(a+b) × h
h = vertical height

Circle
Area = $\pi \times r^2$
Circumference = $2 \times \pi \times r$
r = radius

Square
Area = a^2
a = length of side

Parallelogram
Area = b × h
b = base
h = vertical height

Rectangle
Area = w × h
w = width
h = height

Triangle
Area = ½ × b × h
b = base
h = vertical height

GGT2030
GROWING GAUTENG TOGETHER

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A. TABLE OF CONTENTS

B. INTRODUCTION AND PURPOSE OF THE RELAB

The pandemic has forced schools to resort to the implementation of rotational timetables-where learners who are at home during normal schooling must continue learning. Hence RELAB as a strategy towards the deployment of remote learning.

The RELAB is underpinned by the following Legislative demands:

a) Responding to GDE Strategic goal 2 promoting quality education across all classrooms and schools
b) **DBE Circular S13 of 2020** the requires the GDE to support the implementation of the Recovery Annual Teaching Plan (RATP)
c) **GDE Circular 11 of 2020** requiring districts to issue Learning Activity Packs to support schools for lockdown learning. Understanding learning constraints at home as majority of learners do not have access to devices or data to use for online learning. Many households are depending on schools to provide them with learning resources packs

RELAB is designed in a study guide format, where the content is briefly explained with related concepts as revision, in the form of e.g. notes, mind-maps, concept progression from the previous grade/s followed by exemplar exercises then practice exercises/problems . The exercises are pitched at different cognitive levels to expose learners at Grade 10 & 11 to these different cognitive levels of questioning. The NSC diagnostic reports in different subjects have revealed that learners fail to analyse questions and as a result fail to respond accordingly.

The RELAB is intended to ensure that learners work on exercises as per topics taught while at school. These exercises must be completed at home, fully and learners will receive feedback as groups or individually at school. It is therefore of paramount importance that teachers mark the work with learners in class, as a way of providing feedback. Educators must diagnose learner responses, remediate where necessary and plan further intervention.

Educators are encouraged to create whatsapp groups to remind learners on what is expected of them in a particular week/ day(s). There shouldn't be a backlog on curriculum coverage as content will be covered simultaneously. Feedback from learners at home will confirm usage of the RELAB material.

RELAB further prepares learners for formal assessment.

GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

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REMOTE LEARNING EXERCISES/WORKSHEETS

EXERCISES AND MEMORANDA

LEARNER GUIDE

TERM 1

SUBJECT: MATHEMATICAL LITERACY

GRADE: 10

TOPIC(S):

- **NUMBERS AND CALCULATIONS WITH NUMBERS**
- **PATTERNS, RELATIONSHIPS AND REPRESENTATIONS**
- **DATA HANDLING**

WEEKS: 1 – 10

WEEK	SECTION	ACTIVITY
1	Number formats • Decimal point/comma; thousand separators (1000, 1000 000, etc.) • Positive and negative numbers in contexts; conversions between number formats (e.g. dozen, over, century, etc.)	**Worksheet 1** 1.1. Write the following numbers into words: a) 340 253 535 b) 2 740 253 535 1.2. Write the following words into number: a) Five thousand, two hundred and twelve and Fifty-Two. b) Two hundred and forty-five million, two hundred and twenty-one thousand and five 1.3. A bottle of juice at the tuckshop cost R9,55 each and you must buy 9. Determine approximately how much change you will get if you have R100. 1.4. Grade 10 learners raising funds for a charity and selling ice-cream for R5,20 each. If they must raise R500, estimate how many ice creams they must sell.

WEEK	SECTION	ACTIVITY
1	• Time formats conversions (sec – min – hours – days – weeks – months – years – decade)	1.5. Three people win equal shares of a lotto pay-out which is a total of R79 752. How much does each person receive? 1.6. A soccer coach buys a team, which has 11 players, a juice (R10 each) and muffin (R4,50) after they won a match. If he wants to get himself a Juice too, but does not have a muffin, how much will he pay? 1.7. Cathy has R720, 50 in her bank account. She receives R265 from her family for her birthday. She spends R120 on a new calculator and banks the rest of the money. How much does he now have in his account? 1.8. Explain the difference between R500 and -R500 on a bank statement. 1.9. The coldest day for 2020 for Toronto Canada was recorded in February when the temperature dropped to twenty comma six degrees below freezing point. Write this temperature down in digits. (Remember to add the unit in which it is measured.) 1.10. Complete the time conversions tabled below:

Item	Nunber
1 dozen	---(a)-----items
1 year	----(b)--- days
1 decade	----(c)----- years
1 century	--(d)---- years
1 millenium	-----(e)---- years

WEEK	SECTION	ACTIVITY
2	• Operations with whole numbers and decimals with and without a calculator • Operations with fractions	**Worksheet 2** 2.1. A painter worked out that he will need 4,2 tins of paint. How many tins of paint must he buy? 2.2. Calculate the number of full meals a bag of dog food makes. On average, each dog gets 180 g of food and the bag is 50 kg. 2.3. Mark calculated that he needs 6,4m of steel to fix the carport. If the steel shop only sells steel in whole metre lengths, how many metres of steel will he need to buy at the steel shop.

		2.4. What is the highest number you can display on your calculator? Write it out in words.
		2.5. Share 15 sausage rolls equally among 12 learners. How much sausage roll will each learner receive?
		2.6. Mike drinks 1½ mugs of milk at breakfast. His sister, Sharon, drinks ¾ of a mug of milk. How much milk do they drink altogether?
		2.7. A tile shop has tiles of various sizes for sale. Calculate the length of the sides of square tiles with the following areas: 121 cm^2.
		2.8. A recipe for muffins calls for $\frac{1}{3}$ cup sugar to 2 cups of flour. How many cups of flour do you need to add to 3 cups of sugar?

WEEK	SECTION	ACTIVITY
3	• Rounding, • Ratio, • Rates, • Direct and Indirect (Inverse) proportion, • Percentages	**Worksheet 3** 3.1. There are 143 girls and 91 boys in a school. What is the ratio of boys to girls in simplest form at the school? 3.2. If there are 24 red and blue Smarties in a box and they are in the ratio blue : red = 1 : 3, how many red Smarties are in the box? 3.3. Two Mathematical Literacy Classes have a ratio of boys to girls as follows: • Grade 10A ratio 4:5 • Grade 10B ratio 7:8 Determine which class has the highest ratio of boys to girls. 3.4. If Cement, Sand and Stone have to be mixed in the ratio 1 : 2 : 3 to make high-strength concrete, how many wheelbarrows of sand and stone should be mixed with 5 wheelbarrows of cement? 3.5. The Math Lit teacher makes the statement: "The less unnecessary additions you do, the more likely you are to calculate correctly". Is the statement above an example of direct or indirect proportion?

3.6. The table below shows the number of days it takes cleaners to clean the hotel.

No. of cleaners	1	2	3	4
Days to clean the hotel	12	(a)	4	3

Use the table above to answer the questions that follow:

3.6.1. Determine the value of (a)

3.6.2. Does this relationship represent direct or inverse proportion? Justify your answer.

3.7. A farmer sold 1 200 bags of oranges in 2020. He would like to increase his production by 5%. How many bags must he sell this year?

3.8. The price of a litre of petrol decreased by 2% from R15,50. What is the new price of petrol per litre?

WEEK	SECTION	ACTIVITY
4	Numbers and Calculations with numbers • Rounding, Ratio and Rates • Direct and inverse proportion • Percentages	**Worksheet 4** 4.1. Niki must buy enough paint to paint four rooms in his house. He needs 5,6 litres of paint for each room. How much paint does he need to paint the four rooms? 4.2. Thabiso had the following money in his pocket: a R20 note; a fifty cents coin and a ten cents coin. How much money did he have altogether? 4.3. Lunga calculates that she needs $8\frac{1}{2}$ boxes of tiles to tile a study room? a) How many boxes of tiles must she buy if tiles are only sold in full boxes? b) Why do you think it is a good idea to have spare tiles?

4.4. The table below is printed on the side of a box of pancake mix:

Pancakes	Amount of mix	Amount of water
6	1 cup	$\frac{3}{4}$ cups
12	2 cups	$1\frac{1}{2}$ cups
18	3 cups	$2\frac{1}{4}$ cups

a) What is the ratio of mix to water for 18 pancakes?

b) Is this the same ratio of mix to water for 12 pancakes?

4.5. You are driving a car and are going to travel 60km. Consider this to be a constant distance throughout the following discussion. If the trip took you:

- Half an hour, your average speed would be 120 km/h.
- 1-hour driving, your average speed would be 60 km/h.
- 2 hours driving, your average speed would be 30 km/h.

Is this an example of direct or indirect/inverse proportion? Give a reason for your answer.

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Worksheet 5

5.1. Tony scores 30 out of 60 for his history test.
Calculate the percentage he received.

5.2. A school has 725 learners and 384 are boys.
What percentage of learners are boys?
Round answer to the nearest whole number.

5.3. Out of 64 100 available ticks, 60 895 were sold.
Determine the percentage tickets that were sold.

5.4. In a cake sale 30 muffins were not sold from 300 muffins.
Calculate the percentage of muffins that are left.

5.4.1. In the local elections in a district there were 23 650 registered voters. At the end of the voting day 16 453 voters came to vote. Determine the percentage that voted, to nearest whole number.

5.4.2. Calculate the percentages. Round answer off to one decimal place.
a) 15mm as a percentage of 60 cm.

b) 640ml as a percentage of 2,3 litres. Round answer to 2 decimal places.

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5.4.3. To buy a motor car of R375 000, Thabo must pay a deposit of R25 250. What percentage of the price is the deposit? Round off the answer to one decimal place.

Worksheet 6

6.1. If 35% of a group of 120 learners take mathematics. How many of these learners take mathematics?

6.2. the government is giving a 5,4% salary increase. A teacher's monthly salary is R21 500. Calculate by how much will the teacher's salary increase.

6.3. A salesman gets a commission of 3,5% on the price. of every fridge he sells. What commission will he get if he sells a fridge for R3 599.

6.4. A play station costs R3 500. If you buy it for cash, a 10% discount is offered. How much discount will you receive?

6.5. In the Argus cycle tour, bicycle riders are informed before the race that 35% of the 400km route is hilly. Calculate how long the hilly route is.

6.6. Kishal made purchases of R4 332 at the hardware store. 15% VAT must be added to this purchase price. Calculate the VAT amount that will be paid for this purchase.

WEEK	SECTION	ACTIVITY
5	Patterns Relationships & Representations • Patterns and relationships • Tables with inputs and outputs	**Worksheet 7** 7.1. 60 Grade 10 learners from Lesedi Secondary School are planning a trip to the Zoo. The bus company charges fixed amount of R15000 per trip. a) How much will each learner pay if they all decide to go to the Zoo? b) If only 45 learners go on a trip how much will each learner pay? c) Bus company allows 5 more learners in the bus adding the total number to be 65, how much will the school pay?

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7.2.   Copy and complete the table below:

No of learners	0	2	15	25	30	40	60	65
Hiring cost in (Rands)	15000	15000	a)	15000	b)	15000	1500	c)

d)   What type of relationship is represented in the table?

e)   Is the cost of hiring a bus dependant variable or independent Variable?

f)   Doctor Moloi charges R350 per consultation. If 2 people consulted how much will the Doctor get for consultation

7.3.   Copy and complete the table:

No of People	1	3	a)	9	15	b)
Amount (per person)	R350	c)	350	350	350	350
Amount in R	R350	1050	2100	d)	e)	8750

Worksheet 8

8.1.   Naledi sells a packet of chips for R2.50, if she sells 15 packets on a particular day how much will she make.

8.2.   Jackie's mother gives her R25 every week for cleaning the yard, she decided to save the money to buy herself a cell phone. how much will she have after 12 weeks.
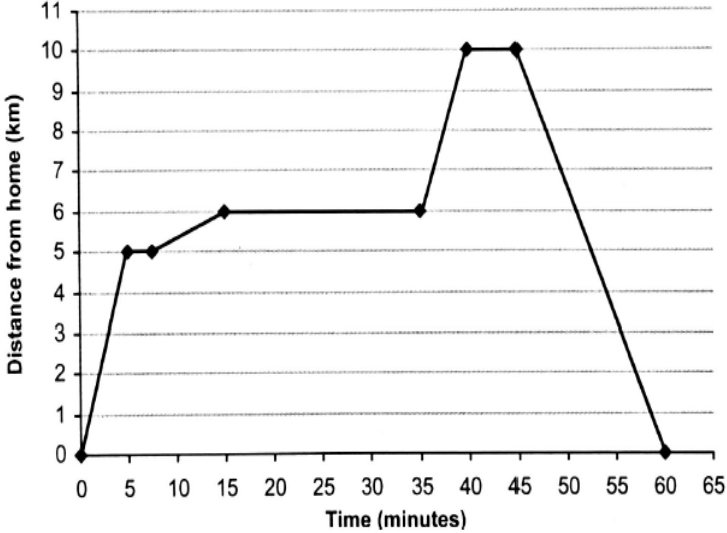
8.3.   Mina invested R9000 in a plan where the growth is as Follows (interest calculated at the end of every year)

No of years	0	1	2	4
Value of investment (R)	9 000	9 500	10 000	-----

a)   Is the independent variable discrete or continuous why and give a reason.

b)   How much interest did Mina earn after one year?

c)   Write down the value of investment after 4 years.

WEEK	SECTION	ACTIVITY
6	Pattern and relationship representations: - Table with dependent and independent values - Equations - Graphs	**Worksheet 9** **Study the following line graph and answer the questions that follow:** 9.1. How long did it take Mrs. Jacobs to travel the first 5 km? 9.2. How long did the entire shopping trip take her? 9.3. How many times did she stop? 9.4. How far does her journey take her away from home? 9.5. What distance is covered over the entire journey? 9.6. If she leaves home at 14:15, at what time will she return? 9.7. When is she driving the fastest? Justify your answer. 9.8. From the last stop it took Mrs. Jacobs 15 minutes to get home. 9.8.1. How far does she travel to get home? 9.8.2. Calculate her speed (in km/h) for the last part of the journey using the information above and the following formula: $Speed = \frac{distance}{time}$

Worksheet 10

Jesse runs a small business selling and delivering mealie meal to the spaza shops. He charges a fixed rate of R80, 00 for delivery and then R15, 50 for each packet of mealie meal he delivers. The table below helps him to calculate what to charge his customers.

Packets of mealie meal (m)	0	10	20	30	40	50
Total costs in Rands (c)	80	235	390	545	700	855

10.1.   Define the following terms:
         10.1.1. Independent Variables
         10.1.2. Dependent Variables

10.2.   Determine the independent and dependent variables.

10.3.   Are the variables in this scenario discrete or continuous values? Explain

10.4.   What shape do you expect the graph to be? Why?

10.5.   Draw a graph on the graph provided to represent the information in the table above.

TOTAL COST OF PACKETS OF MEALIE MEAL

COST (R)

900
800
700
600
500
400
300
200
100

0   10   20   30   40   50

NUMBER OF PACKETS OF MEALIE MEAL

12

TOTAL COST OF PACKETS OF MEALIE MEAL

COST (R)
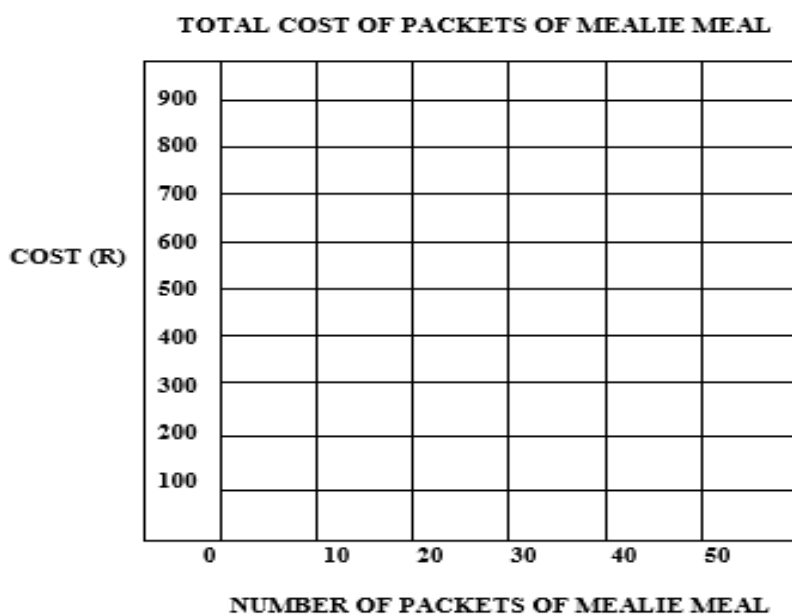
NUMBER OF PACKETS OF MEALIE MEAL
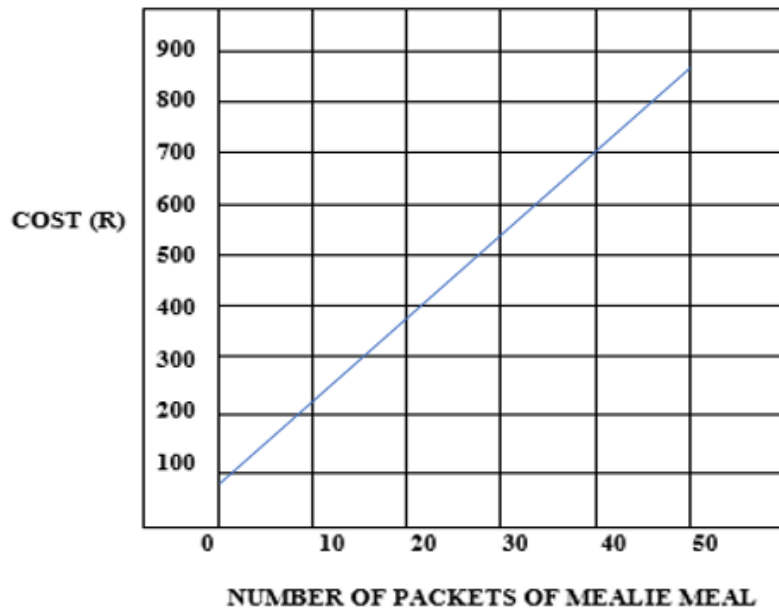
Worksheet 11

Use the graph below to answer the following questions.

Time taken for painters to paint a house

Time taken (days)
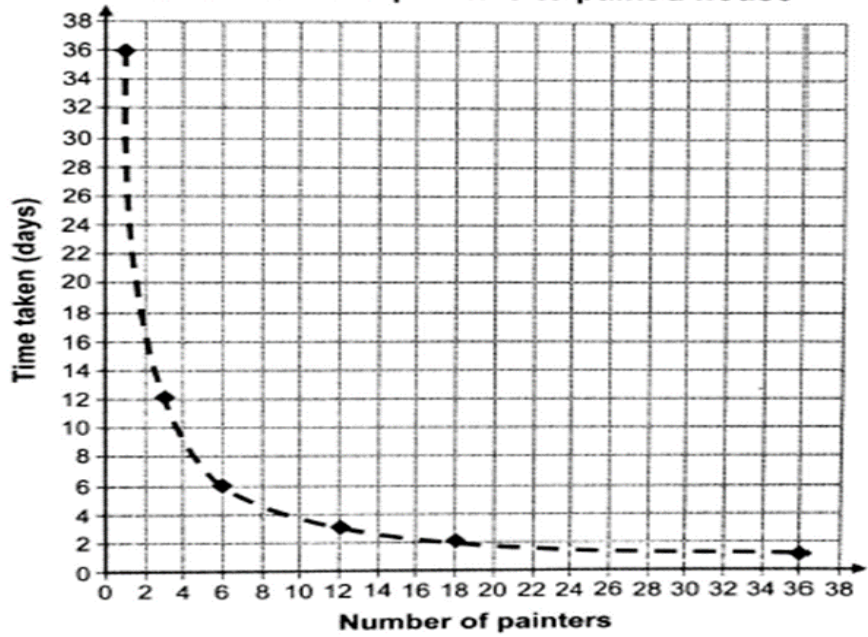
Number of painters

11.1. Use the graph to complete the table of values showing the relationship between the number of painters and the time taken.

REDRAW THE TABLE IN YOUR EXERCISE BOOKS.

Number of painters (n)	1	3	B	12	18	D
Time taken (t)	36	A	6	3	C	1

11.2. What type of relationship is represented above?

11.3. Determine the constant product in the relationship above.

11.4. Why are the points plotted on the graph joined with a dotted line?.

11.5. Describe the relationship in words.

11.6. Use the graph above to determine the number of painters required in order to paint the house in 5 days.

WORKSHEET 12

Ike drives a taxi to his local football grounds. The taxi has the following rates: a flat rate of R3, 00 plus R7, 50 per kilometre travelled.
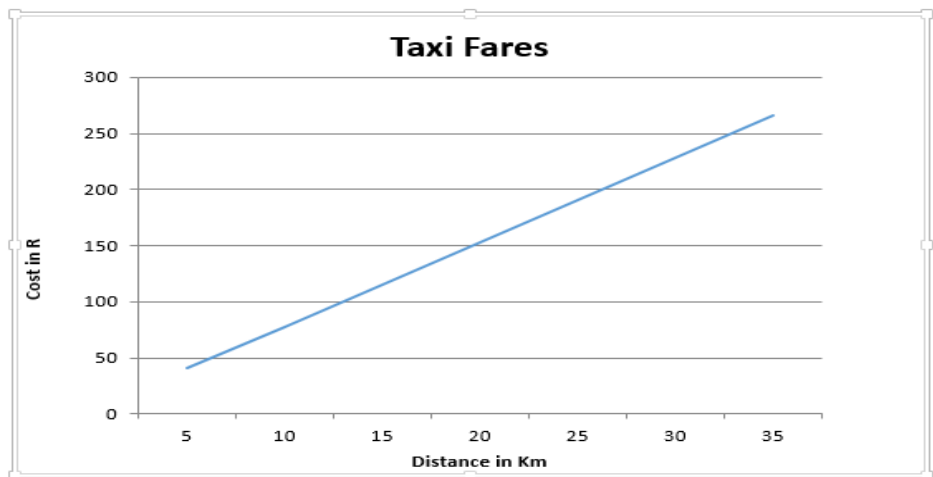
Use the graph above to answer the following questions:

12.1. Identify the dependant and independent variable.

12.2. What type of relationship does this graph represent? Explain.
.
12.3. How much will it cost to travel 7 km?

12.4. If you only have R60, how far would you be able to travel?

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WEEK	SECTION	ACTIVITY

7	Pattern and relationship representations:
	- Interpretation of Tables and Graphs Interpretation Tables Graphs
		Worksheet 13
		
		Kwando is a medical representative. He earns a basic salary of R2 500 plus R1 200 commission for every new client he signs up**.**
		
		13.1. How much does Kwando earn if he doesn't sign up any new clients?
		
		13.2. Determine the missing values in the table.
		
		<table><tr><td>Number of clients</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>Total salary earned</td><td>A</td><td>B</td><td>4 900</td><td>6 100</td><td>C</td><td>8 500</td></tr></table>
		
		13.3. Determine the following:
		     13.3.1. The dependent variable.
		     13.3.2 The independent variable.
		     13.3.3. The starting value or amount.
		     13.3.4. The constant difference between the first and
		           Second client.
		
		Worksheet 14
		
		14.1. Mrs. Nkuna wants to take her grade 10 learners to the Johannesburg Zoo. She has calculated the amount of money each learner must contribute for the entry fee, lunch and transport. The table below shows the amount payable for different numbers of learners taken to the zoo.
		
		<table><tr><td>Number of learners</td><td>5</td><td>10</td><td>A</td><td>30</td><td>45</td></tr><tr><td>Amount payable (R)</td><td>400</td><td>800</td><td>1 600</td><td>B</td><td>3 600</td></tr></table>
		
		14.1.1. Determine the value of A and B in the table.
		
		14.1.2. If she collects R2 000, how many learners will she be able to take to the zoo?
		14.1.3. Mrs Nkuna needs at least R2 500 to be able to take learners to the zoo. How many grade 10 learners must she have in order to collect R 2 500?

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14.2. Lindi and Thabang went on a day hike and drew this graph to show their progress.
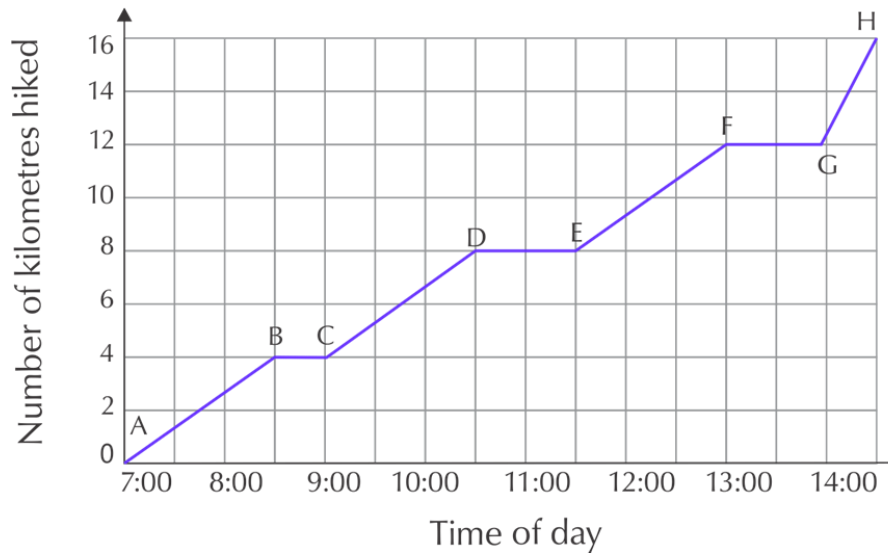
14.2.1. What was the total distance of the hike and how many? hours did it take?

14.2.2. Give the times when Lindi and Thabang were resting.

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WEEK	SECTION	ACTIVITY

8	**Developing Questions, Collecting and Organising Data**	**Worksheet 15**
		
		15.1. Which method should be used to collect data for each of the following:
		    a) Mode of transport learners use to get to school.
		    b) The number of books each learner has in grade 10.
		    c) The number of hours each learner sleeps at night.
		    d) The weight of all learners in your class.
		    e) Quality of service given by a cellphone service provider.
		
		15.2. The frequency table below shows the heights of some plants (seedlings)
		
		Use the frequency table above to answer the questions that follow:
		    a) How many plants were measured altogether?
		
		    b) How many plants are less than 22 mm high?
		
		    c) How many plants are more than 27 mm high?
		
		    d) Into which interval would you place a plant that is 27,8 mm high?
		    e) How many plants are at least 28 mm high?
		
		15.3. A survey was done at Fundakahle High School to determine the number of boys and girls who enjoy reading.
		The results are provided in the table below. Study the table and answer the questions that follow.
		
		Determine the missing values A and B in the table above.

15.2. Table

Height of plants in mm	Frequency
10 – 15	4
16 - 21	7
22 – 27	8
28 – 33	6
34 - 39	5

15.3. Table

	Enjoy reading	Do not enjoy reading	TOTAL
Boys	A	212	327
Girls	375	101	473
TOTAL	487	B	800

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WEEK	SECTION	ACTIVITY
9	• **Summarising Data** - Mean - Mode - Median	**Worksheet 16** 16.1. The body mass (in kg) for each member of the under 17 rugby team from Fundakahle High School is recorded in the table below. Refer to the information and answer the questions that follow. <table><tr><td>47</td><td>55</td><td>53</td><td>58</td><td>51</td><td>60</td><td>58</td><td>46</td></tr><tr><td>55</td><td>44</td><td>55</td><td>50</td><td>62</td><td>49</td><td>52</td><td>64</td></tr></table> a) Write down the mode for the U-17 rugby team. b) Define the term median. c) Calculate the median for the U-17 rugby team. d) Calculate the mean for the U-17 rugby team. e) Determine the range of body mass for U-17 rugby team. 16.2. Lizelle ran the following times for the last 7 Half-Marathons she entered. <table><tr><th>1st</th><th>2nd</th><th>3rd</th><th>4th</th><th>5th</th><th>6th</th></tr><tr><td>2h00min</td><td>2h05min</td><td>2h00min</td><td>1h58min</td><td>2h01min</td><td>2h45min</td></tr></table> a) What is the mean of her race times? (hint convert data to minutes) b) What is the median of her race times? c) What is the mode of her race times?

WEEK	SECTION	ACTIVITY
10	• **Summarising Data** - Mean - Mode - Median - Range	**Worksheet 17** 17.1 A dietician recorded the following heights of a group of Grade 11learners to check their health status. Use the table below to answer the questions that follow (round answers to 1 decimal place, where necessary).

<table>
<tr><th>Name</th><th>Height in cm</th></tr>
<tr><td>Nomthandazo</td><td>158</td></tr>
<tr><td>Ntokozo</td><td>152</td></tr>
<tr><td>Nhlanhla</td><td>144</td></tr>
<tr><td>Maggy</td><td>161</td></tr>
<tr><td>Eunice</td><td>169</td></tr>
<tr><td>Brenda</td><td>165</td></tr>
<tr><td>Khanyi</td><td>168</td></tr>
<tr><td>Thembi</td><td>160</td></tr>
<tr><td>Pinky</td><td>165</td></tr>
<tr><td>Thandi</td><td>162</td></tr>
</table>

a) Identify the tallest learner?

b) Calculate the mean height of the learners.

c) Determine the median height of the learners. ascending order

d) What is the mode for the heights?

e) Determine the range of the height of the learners.

17.2 Below are the results of learners in a Mathematics Olympiad, arranged in ascending order.

```
42  48  49  50  53  54  55  58  59
60  60  60  60  62  66  67  69  70
71  71  72  72  73  75  76  77  78
```

a) How many learners wrote the Mathematics Olympiad?

b) What is the range of the marks?

c) Calculate the mean mark of the learners. Round to nearest whole number.

d) What is the mode of the marks?

e) Determine the median.

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REMOTE LEARNING EXERCISES/WORKSHEETS
EXERCISES AND MEMORANDA
<u>LEARNER GUIDE</u>

<u>TERM 2</u>

SUBJECT: MATHEMATICAL LITERACY
GRADE: 10

TOPIC(S):

- FINANCE
- MEASUREMENTS
- MAPS AND PLANS
- PROBABILITY

WEEKS: 1 – 10

WEEK	SECTION	ACTIVITY
1	Financial Documents	Worksheet 1 1.1. Mr. Baze has an account with Exclusive Clothing Store and receive an account statement every month. Use the account statement above to answer the questions that follow. a) Show with the necessary calculations how the purchases for the month has been calculated. b) Determine the missing value, A (interest on the money outstanding). c) Exclusive Clothing Store calculates the amount owing using a percentage. Calculate the percentage they have used to determine the amount that Mr. Baze has to pay on the balance that he owes. d) Give ONE reason why Mr. Baze returned the dress. e) Mr. Baze stated that it is unfair of the store not to refund him for the underwear he bought, because it will be of no use to his children. Give ONE reason to support the store for not taking back the underwear.

WEEK	SECTION	ACTIVITY 1
1	Financial Documents	**Account Statement of Mr. Baze 10 for May 2021**

Exclusive Clothing Store
17 Mayfair Road, Lakeside Mall, Benoni   Business hours: Monday to Friday Tel. 011 123
4567 Cell. 089 987 6543   8:30 am. to 5:00 pm.   Saturday: 8:00 am. to 12:00 pm.

STATEMENT

Store Account Holder: Mr. T. Baze, 29 Jonhaon Street Benoni	Date	01 April 2017
	Statement period	01 March 2017 – 31 March 2017
	Page	1 of 1
	Account Number	3658190

SUMMARY

MONEY OWING ON PREVIOUS PURCHASES: R1 215,80
Interest on outstanding amounts is calculated at 31% per annum.

	This month	Last month
Payment received:	R450,00	R320,00
Total purchases for the month:	R975,00	R215,50
Total refunds:	R135,50	R0,00

TOTAL OWING: R1 636,71
MINIMUM PAYMENT REQUIRED: R327,34

DETAILED DESCRIPTION OF PURCHASES

Date	Description	Code	Debit	Credit
01/04/2017	Interest on money owing		A	
06/03/2017	Payment received	----------		R450,00
10/03/2017	Men's jacket	J145875	R476,00	
15/03/2017	Ladies dress	L552632	R135,50	
19/03/2017	Kiddies shoes	C398710	R99,50	
23/03/2017	Refund on returned item	----------		R135,50
26/03/2017	Ladies accessories	L764318	R77,50	
27/03/2017	Kiddies underwear	C444654	R129,50	

		1.2. Explain the following terms in the context of an account statement
		    a) Opening balance
		    b) Closing balance
		    c) Amount Due
		    d) Debit
		    e) Credit

WEEK 1	SECTION	

WORKSHEET 2

Your friend, Kim, has asked you to help him with his bank statement. He is sure there are some errors on the bank statement as some things just do not make sense to him. Below is a copy of Kim's bank statement.

FIRST NATIONAL BANK

Mr Kim de Villiers   Statement   Account
number 23456799
28 Nahoon Street   for January 2019   Vincent
Park Branch
Nahoon   Branch
code: 211021
5241

Date	Details	Debit		Credit		Fees		Balance	
1/1/19	Opening balance							12 783	56
3/1/19	Deposit			1 000	00	15	00	13 768	56
5/1/19	Payment: Con Cars	876	45			2	50	12 889	61
5/1/19	Payment: M Smith	2 000	00			2	50	10 887	11
12/1/19	EFT Purchase	125	60			1	00	**A**	
26/1/19	Payment: S Yusuf	2 600	00			2	50	8 158	01
28/1/19	Salary			11 560	00			19 718	01

(NOTE: EFT means electronic funds transfer.)
- The fee for deposits is R2,00 plus R1,00 for every R100,00.
- Stop order payments cost R2,50 regardless of the amount.
- Card purchases cost R1,00 regardless of the amount.
- Rent is Kim's biggest expense.

Use the bank statement and the information above to answer the questions below.

a) Determine the missing value of **A**.
b) Kim claims that there is a mistake in the fees column. Indicate where this mistake occurred and verify, with the necessary calculations, whether his statement is valid or not.
c) Kim states that her bank fees for January 2019 will be more than R30,00. Verify, with the necessary calculations, whether his estimation is valid or not. Keep in mind that the error has been corrected.
d) State ONE possible reason why banks are charging fees.

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WEEK	SECTION	ACTIVITY

2	Tariff System	**Worksheet 3**
		
		You are given the following information about bank charges for a Town Bank current account.
		
		Withdrawals
		Over the counter: R23,00 plus R1,10 per R100 or part thereof
		Town Bank ATM: R3,50 plus R1,10 per R100 or part thereof
		Another bank's ATM: R5,50 plus R3,50 plus R1,10 per R100 or part thereof Till point - cash only: R3,65
		Till point - cash with purchase: R5,50
		
		    a) Calculate the fee charged for a R2 500 withdrawal from a Town Bank ATM.
		        $R3.50 + (R1{,}10 \times 25) = R31$
		
		    b) Calculate the fee charged for a R750 withdrawal from another bank's ATM.
		        $R5{,}50 + [R3.50 + (R1{,}10 \times 8)$
		        $= R5{,}50 + R15{,}30$
		        $= R20{,}80$
		    c) Calculate the fee charged for a R250 withdrawal from the teller at a branch.
		        $R23 + (R1{,}10 \times 3)$= R26,30
		
		    d) What percentage of the R250 withdrawal in question (c) is charged in fees?
		
		    $\frac{R26{,}30}{R250} \times 100 = 10{,}5\%$
		
		    e) Would it be cheaper to withdraw R1 500 at the bank or from a Town Bank ATM?
		
		        $Bank: R23 + (R1{,}10 \times 15) = R39{,}50$
		      $ATM = R3{,}50 \times +(R1{,}10 \times 15) = R20$
		
		      $\therefore The\ ATM\ will\ be\ cheaper$

Worksheet 4

Answer the following questions

4.1. Anita has a cellphone contract that costs her R 100 per month plus 85 cents per peak time SMS, and 25 cents per off-peak time SMS. If she sends 45 -SMSs during peak time and 105 SMSs during off-peak time in a month, what will her monthly bill come to?

4.2. If your electricity cost R32,21 per unit in August 2018, and R0,66

per unit in August 2019:

a) How much would you have paid for 2 000 units in August 2018?
b) How much would you have paid for 2 000 units in August 2019?
c) What was the percentage increase between August 2018 and August 2018?

4.3. In September, Palesa spent 3 h 45 min making local calls. During that month, Telkom increased its rates from 12c/min to 13c/min. It also increased the rental fee from RI 13, 50 to R126, 60.

a) Calculate how much Palesa would have paid under the old charges.
b) Calculate how much Palesa paid on the new charges.
c) Assume that the monthly cost of using a Telkom line is R 130 and the rate per minute for calls within a 50 km radius is R0, 23.

Set up a formula to illustrate this situation and to complete the table.

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Worksheet 5

David is trying to decide between two cellphone packages to use for making his work calls. He only works from Monday to Friday and has his own private phone for use after hours and during weekends.

Prepaid Option
6c per second (during work hours)

Contract Option

R381, 90 per month, which includes 200 minutes (charged
per minute or part thereof). Thereafter, calls are charged at R1, 37 per minute (during work hours).
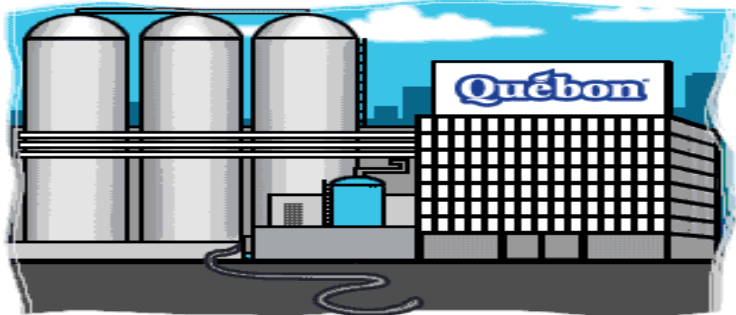
Here is a list of the calls that he made in a day:

Length of call
3 min 15 secs
4 min 30 secs
0 min 45 secs
0 min 24 secs
12 min 10 secs
0 min 40 secs

5.1. For how many seconds did he talk in total during the day?

5.2. Using the prepaid option, he would pay per second. Using your answer to question 2.1, calculate how much he would have to pay for the calls that he made. (Express your answer in Rands.)

5.3. How many minutes does he get as part of the Contract option?

5.4. The Contract option bills him "per minute or part thereof".
This means that a call lasting 2 min 12 seconds is charged as a 3 minute call.

How many minutes would he use up on his contract to make the above calls?

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		5.5. He calculates that he will use up all of his "free" minutes on the Contract option in 8 working days. This means that he has to pay for the extra 14 working days per month.
		
		    a) Why does he say that he only has 22 working days in a month (14 + 8 days = 22 days)?
		
		    b) He calculates that he will have to pay for an extra 350 minutes of calls per month. How much extra will he have to pay for calls?
		
		    c) 2.5.3 Using your answer from question 2.5.2, calculate the total that he would pay per month for the Contract option.
		
		5.6. Using your answer to question 2.2, how much would he pay per month for his calls if he used the Prepaid option for his work calls?
		
		5.7. Using your previous answers, which option would you advise him to choose? Give a reason for your answer.

WEEK	SECTION	ACTIVITY

Week 3	Conversion	**Worksheet 6**
		
		6.1. Mary-Jane rides 14,84 km on her bicycle.
		
		    a) How far does she ride in mm?
		    b) Which unit (km or mm) do you think is best for measuring this distance?
		
		6.2. A large vat in a milk factory holds $4\ 600\ l$ of orange juice.
		
		    a) How many ml of orange juice can it hold?

b) Which unit (millilitres or litres) do you think is best for measuring the capacity of the juice vat?

6.3.   A bag of maize weighs 25 000 g.
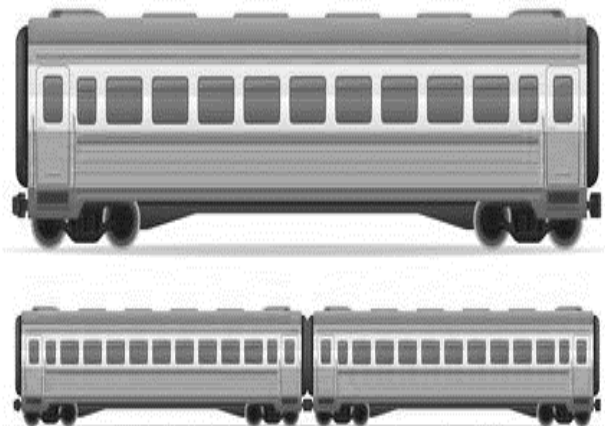
a) How much does the maize weigh in kg?

b) Which unit (g or kg) do you think is best for measuring the weight of the bag?

6.4.   The distance from Johannesburg to Bloemfontein is 398 000 m, and distance from Bloemfontein to Cape Town is 1 005 000 m.

a) Calculate the total distance from Johannesburg to Cape town in km.

b) Which unit (m or km) do you think is best for measuring the distance from Johannesburg to Cape town?

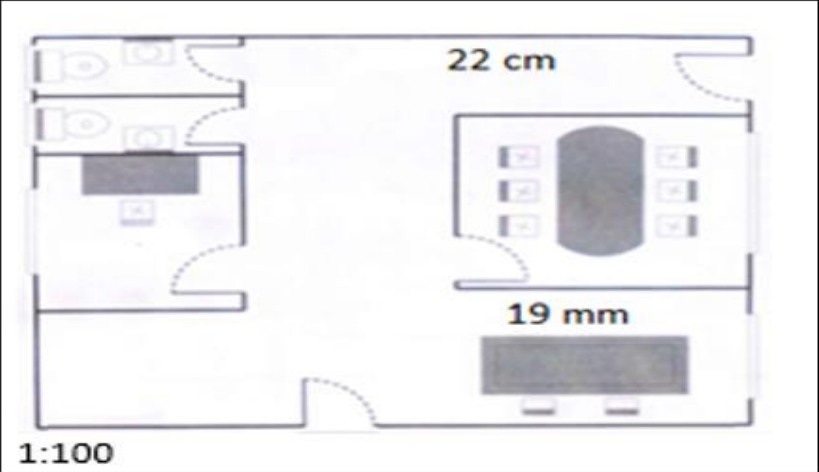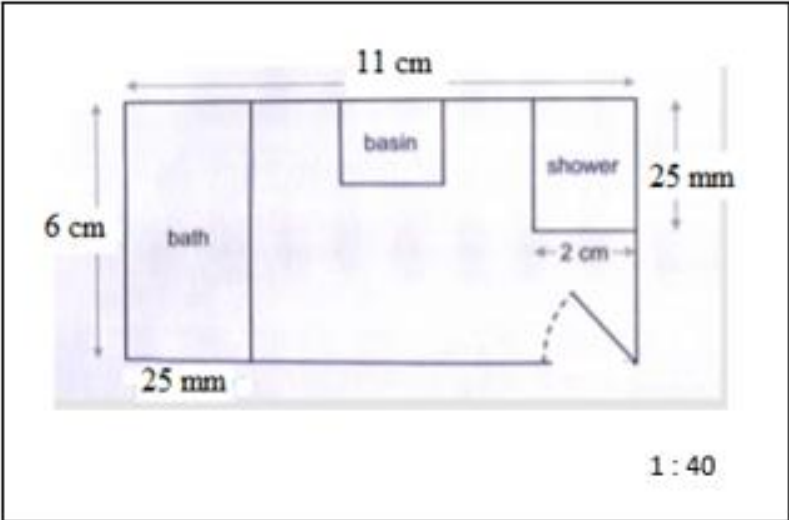6.5.   A train carriage weighs 16 500 000 g. Convert the weight of the train carriage into tonnes.

Note: 1000 kilograms (kg) = 1 tonne (t)

| WEEK	SECTION	ACTIVITY
4	Measuring & estimating • Positive and negative numbers in contexts; conversions between number formats (e.g. dozen, over, century, etc.) • Time formats conversions (sec – min – hours – days – weeks – months – years – decade	**Worksheet 7** Mrs. Smith is visiting South Africa for soccer World Cup. In her country temperature is measured in degrees Fahrenheit (^{0}F). She used the graph below to easily convert temperatures between degrees Fahrenheit (^{0}F) and degrees Celsius (^{0}F). Use the graph above to answer the following questions: a) Is this graph representing an increasing, a decreasing or a constant function? b) The melting point of ice is 0 ℃. Write down the melting point of ice in degrees Fahrenheit. c) What is a temperature of °F 104 in ℃? d) What is a temperature of –6 ℃ in °F? Round the answer off to the nearest degree. **Worksheet 8** Mr Petersen's company is awarded the contract to cut grass at a school sports field. The management of the school warns Mr. Petersen that there will be days when the grass will have to be cut within 1 hour due to unexpected sports fixtures. Mr. Petersen draws a graph to help him decide how many workers he needs to send to the school to cut the grass, as well as the lengths of time they would need.

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NUMBER OF WORKERS NEEDED AGAINST TIME TAKEN
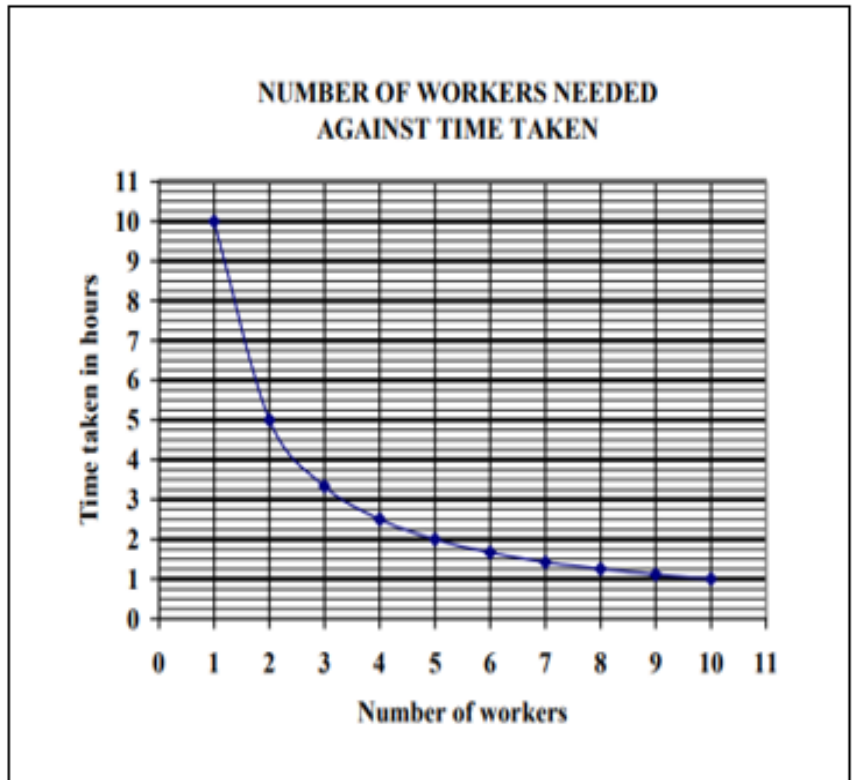
8.1. Exactly how many workers must Mr Petersen send for the grass to be cut within:
  a) hour?
  b) 2,5 hours?

8.2. How long should it take exactly 8 workers to cut the grass?

8.3. On a particular day it took 5 hours to cut the grass. minutes
  Suppose the workers started at 08:00 and took two 15-minute tea breaks and a half-hour lunch break.
  At what time would the workers finish cutting the grass.

8.4. Casual workers employed during the Soccer World Cup were paid an hourly rate of R12,50. The following formula may be used:
  Daily payment = hourly rate × number of hours worked

  a) One casual worker worked 2 1 8 hours daily. How much did he/she earn daily?

  b) A casual worker was paid a total of R218,75. For how many hours did he/she work?

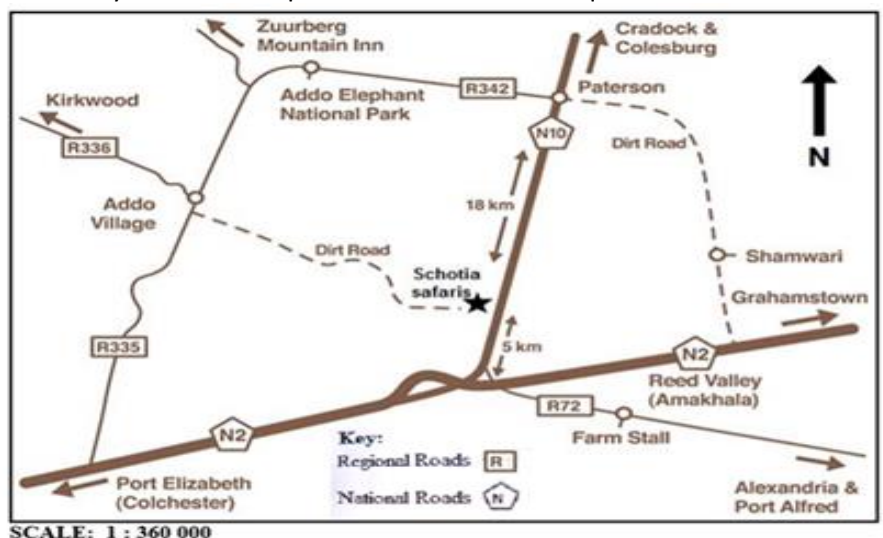| WEEK	SECTION	ACTIVITY
5 – 6	**Scale** • Number Scale or Ratio scale • Bar Scale	**Worksheet 9** 9.1. Explain the meaning of each of the following number scales: a) 1 : 100 b) 1 : 50 9.2. Study the floorplan above and answer the questions that follows: **Note:** **Width of Office = 22cm and Length of the reception desk = 19mm** a) Calculate the actual width (in m) of the office if . b) Calculate the actual length (in m) of the reception desk. 9.3. Study the floorplan of a bathroom below and answer the questions that follows: a) Calculate the actual length of the shower in m. b) Calculate the actual width of the bathroom in m. c) Calculate the actual perimeter of the bathroom in m.

Worksheet 10

10.1.   Use the map below to answer the questions that follow:
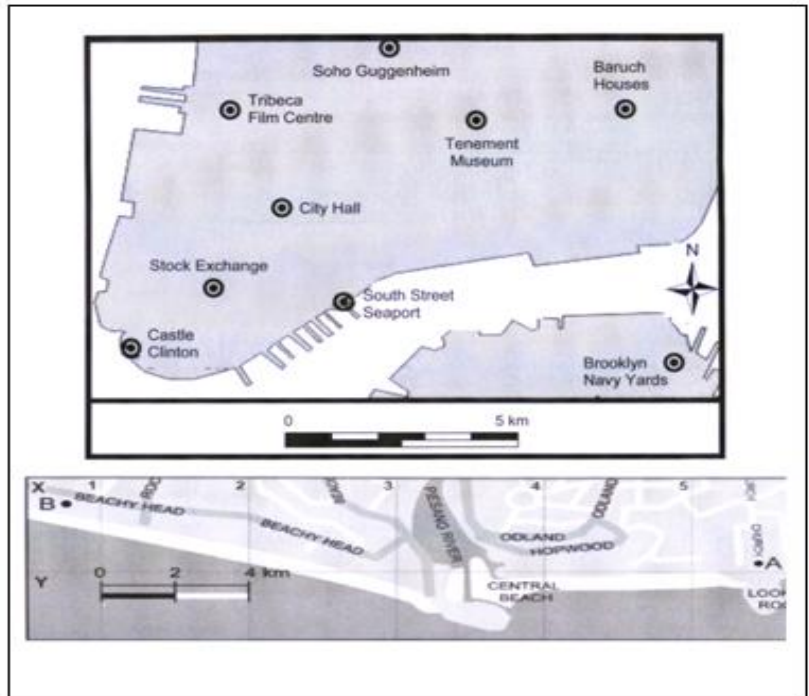
a) Measure (in mm) the straightline distance from the Brooklyn Navy Yards to the Museum.
b) Measure the distance in mm from point A to point B
c) Complete the following: ___ : 4 km.
d) Calculate the actual distance (in km) from South Street Seaport to Soho Guggenheim.
e) Give ONE advantage of a bar scale.
f) Name ONE disadvantage of a bar scale

Worksheet 11

11.1. Study the route map below and answer the questions that follow.


SCALE: 1 : 360 000

a) Identify the type of scale used on the map.

b) Write the scale in words.

c) Calculate the total number of National roads on the map.

d) Give the general direction of Kirkwood from Shamwari.

e) Describe the shortest route from Shamri to Schotia safaris.

WEEK	SECTION	ACTIVITY
7	Scale	Worksheet 12 12.1 Study the floor plan of a house below and answer the questions that follow: a) Identify the type of scale on the floor plan. b) Calculate the total number of interior doors on the floor plan. c) Calculate the length of the garage in m. d) Name the bedroom(s) facing north.

Worksheet 13

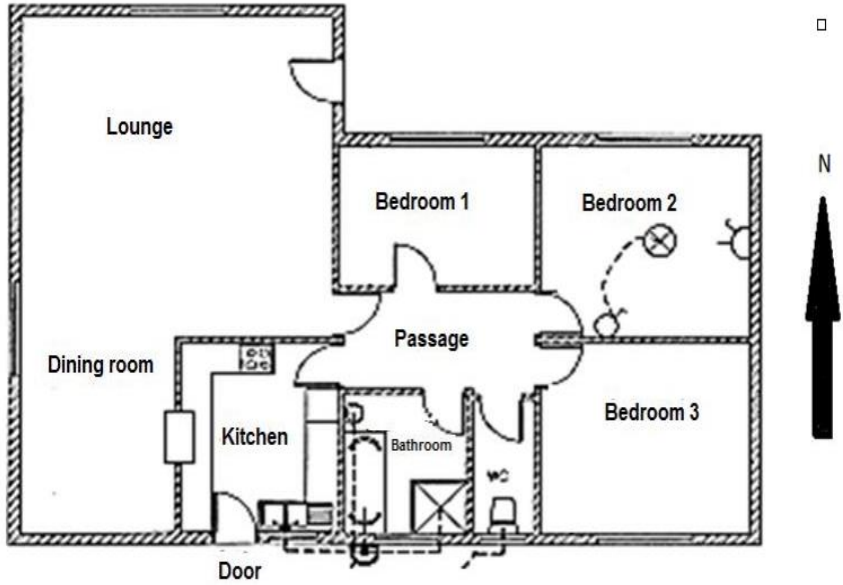Study the floor plan of an open-air arena below and answer the questions that follow:
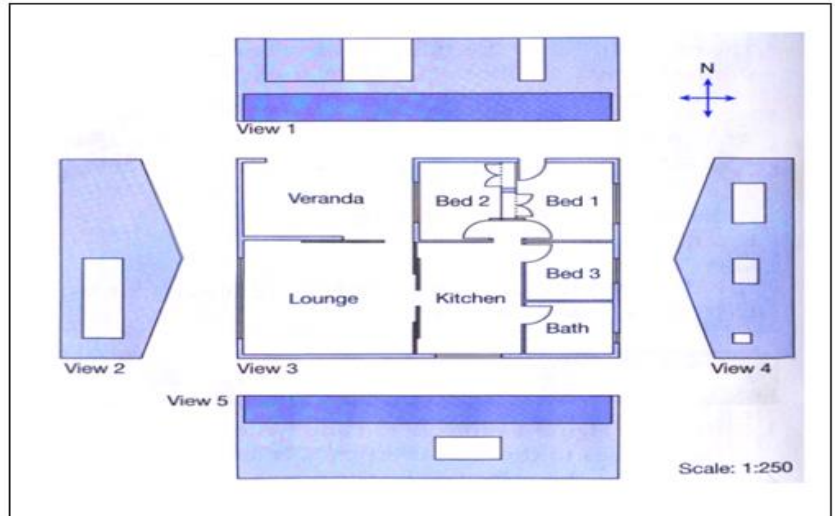
a) Identify the scale of the map.
b) Calculate the total number of interior doors on the floor plan.
c) Calculate the length of the house in m.
d) Name the bedroom(s) facing north.

WEEK	SECTION	ACTIVITY
8	• Maps, plans and other representations.	**Worksheet 14** 14.1. The distance between Kuils River and Beaufort West is 15 cm on a map. Determine the real distance (in km) between the two towns if the scale on the map is 1 : 3 750 000. 14.2. A tin of Nestlè coffee has a diameter of 100 mm and a height of 120 mm. A cardboard box is 500 mm long, 300 mm wide and 240 mm high. Study the diagrams below and answer the questions. Dimensions of large rectangular box: Length = 500 mm Width = 300 mm Height = 240 mm Dimensions of small coffee tin: Diameter = 100 mm Height = 120 mm [Sources: Souq.com and http://www.outofafricatrading.com]

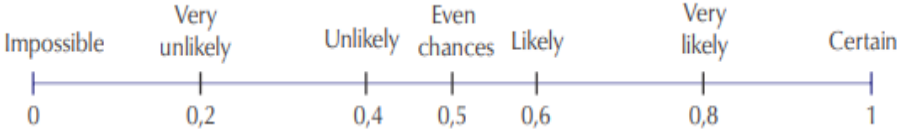|		a) Determine the maximum number of tins that can be packed in the cardboard box. 14.3. The Jason family has bought a new home. The floor plan of the house is shown below. Study the floor plan and answer the questions that follow. Scale 1 : 120 a) What is the compass direction of bedroom 3 from the lounge? b) How many windows are shown on the floor plan? c) How many interior doors are shown on the floor plan? d) Using your ruler, determine the dimensions of bedroom 1 on the floor plan. e) Using the given scale, calculate the actual area of bedroom 1 in square meters. **You may use the following formula:** **Area of rectangle = length × width**

WEEK	SECTION	ACTIVITY
9 - 10	Probability • Expression of probability (events and outcomes) • Prediction Relative frequency and theoretical	 **Note: Cannot have the value of probability being negative or greater than 1.** **Worksheet 15** 15.1. Give each of the events below, a word description from the probability scale:

$$P(event) = \frac{\text{number of possible ways an event can happen}}{\text{total possible outcomes for the event}}$$

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		probability of an event • Tree diagrams and two-way tables	

probability of an event
• Tree diagrams and two-way tables

c) What is the chances of winning the lottery if you buy a ticket every week for 1 month?

d) What is the chance of getting a head when a coin is tossed once?

e) How likely is it that a car can travel 120km in 10 minutes?

f) How likely is it that a green ball is selected at random from a bag containing 18 green balls and 2 black balls?

g) What is the chance that the month August will follow July?

15.2 State the probability of each of the following events as a common fraction and percentage:

c) The sun will rise and set tomorrow.
d) Tuesday comes before Monday.
e) Picking a red card from a deck of 52 cards, excluding the jokers.
f) Picking a R2 coin if a bag has 4 R2 coins and 16 R1 coins inside it.
g) A dice is rolled. The chance of throwing a number less than 6.

15.3. If a coin is tossed once:

a) Write down all the possible outcomes.
b) Are all the outcomes equal or not?
c) What is the probability of getting a tail?
d) What is the probability of getting a head or tail?

15.4. A dice is rolled once.

a) How many possible outcomes are there?
b) What is the chance of throwing any number from 1-6?
c) What is the probability of getting an even number, as a common fraction?
d) What is the chance of throwing a 7?

15.5. The weather reporter indicates that the chance of rain tomorrow in Gauteng is 80%.

a) What is the likelihood that it will be very hot tomorrow?
b) What is the chance of having heavy rain tomorrow?
c) What is the probability that it will not rain tomorrow?

GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

_____

REMOTE LEARNING EXERCISES/WORKSHEETS

EXERCISES AND MEMORANDA

LEARNER GUIDE

TERM 3

SUBJECT: MATHEMATICAL LITERACY

GRADE: 10

TOPIC(S): FINANCE
MEASUREMENTS

WEEKS: 1 – 10

WEEK	SECTION	ACTIVITY
1	Income, expenditure, profit/loss, statements and budgets. • Perform calculations involving the above • Identify fixed, variable and occasional income and expenditure values from financial documents.	**Worksheet 1** 1.1. Pami sells furniture and earns a 13% commission on the amount of her sales. a) She sells R12 000 worth of furniture in March. What would she earn in commission? b) What would she earn in commission, if she sold R8 000 worth of furniture? c) Is the commission she receives an income or an expenditure? d) Identify the income earned in a) and b) as a fixed, variable or occasional income. Give a reason for your answer. 1.2. Daniel rents a 2-bedroom apartment at the Shades for 1 year. He pays a monthly rental of R6 500, including water and electricity. a) How much rent will he pay for the year. b) Is the rent he pays monthly, an income or expense? c) Classify the rental paid in a) as a fixed or variable expense. Give a reason for your answer. d) Daniel buys food monthly from the grocery store near him. Classify the food bought as a fixed or variable expense.

1.3.   Jared works at a shop which sells accessories of soccer. He is paid a salary of R3 500 a month and an additional 11% on all the sales he makes. In August, he sold R42 000 worth of goods.

a)   What is his fixed income for the month?
b)   Calculate his commission for August.
c)   He usually pays for the following items each month:
     Rent R1 500, transport R285, medical aid R800, food R1 450, cellphone R135, entertainment R400, clothing R300 and bank fees R24. Write down three fixed expenses.

d)   Classify his income and expenses for the month, in a table.

Income	Amount	Expenses	Amount

e)   Calculate the total income and total expenses, on the table in d).

Income	Amount	Expenses	Amount
TOTAL		TOTAL	

f)   How much money does Daniel save after paying for all the expenses?

g)   Does Daniel have a profit or loss using the answer in f)?

WEEK	SECTION	ACTIVITY
2		**Worksheet 2** 2.9. To answer the following activity, get your information by reading newspapers, watching television or ask your family members. a) Explain the difference between fixed and variable income. b) List 2 fixed income and 2 fixed expenses. c) Write down 1 variable income and expenditure. d) Write down 1 occasional income and expenditure. 2.10. Simone works as a manager at CC Travels. She receives the same monthly salary and transport allowance. The table below shows the different types of income she receives and her monthly expenses.

Income	Amount	Fixed, variable, occasional
Monthly Salary	R22 500	
Annual Bonus	R15 000	
Cash gifts from family	R 800	
Transport allowance	R 500	
Expenses	**Amount**	
Rent	R6 500	
Groceries	R3 600	
Cell phone contract	R 689	
Water and electricity	R1 150	
Insurance premium	R 960	
Petrol	R1 300	
Medical aid	R3 750	
Purchase gifts	R 600	

a) Use the table above and indicate whether the income and expenditure is fixed, variable or occasional.

Income	Amount	Fixed, variable, occasional
Monthly Salary	R20 500	
Bonus	R13 000	
Cash gifts from family	R 800	
Transport allowance	R 900	
Expenses	**Amount**	
Rent	R6 500	
Groceries	R3 600	
Cell phone contract	R 689	
Water and electricity	R1 150	
Insurance premium	R 960	
Petrol	R1 300	
Medical aid	R3 750	
Purchase gifts	R 600	

b) If you spend 10% of the salary from a) on entertainment, how much money will be spent?

c) Calculate the total of her fixed income received in a).

d) Calculate the total of her variable expenses.

e) Simone monthly salary is decreased by 10% due to the decline in sales at the company. She will not receive a transport allowance. Hence, she will not be able to cover all her expenses. Advise Simone on how she can still cover her expenses.

f) Suppose Simone receives an increase and wants to buy a new cell phone with the extra money earned. There is still 5 months left for her cell phone contract to end. What would you advise her to do?

WEEK	SECTION	ACTIVITY
3	Analyse and prepare income-and-expenditure statements and budgets	**Worksheet 3** 3.9. A household lives on the following income: The father's salary of R10 200 and the mother's salary of R7 100. They have the following monthly expenses: Rent R5 500, Pre-paid electricity R1 800, Water bill R800, Groceries R5 000, Clothing store account R1 000, Entertainment R1 600, Transport R1 400 and Medical Expenses R 500. a) Draw up a statement for the household. b) What is the difference between the income and expense? c) Is there any money saved for the month? d) Is a profit or loss made by referring to the answer in b)? Explain your answer. e) Which ONE cost could be reduced? f) If the cost is reduced, would they have enough money to cover the expenses? g) What advice would you give the family? Write down two suggestions.

Income	Expenditure
Total income:	**Total expense:**

3.10. Jen is planning to have a party. She is going to charge a small fee (R10 per person) at the door to help cover her costs.
She expects 30 friends to come to the party. She is also going to spend some of her own money on the catering.
Jen draws up a budget and anticipates that her income and expenditure will be as follows:

Income			Total
	Charge at door	R10 x 30	R 300
	Jen's contribution	R400	R1 300

Expense			Total
	Juice	R100	R 100
	Cake	R200	R 300
	Paper plates and cups	R 50	R 350

a) Can you think of any other expense she forgot to include in her budget?
b) If all 30 friends arrive and Jen sticks to her budget of R350,00 worth of expenses, how much money will she have left over?
c) At the last minute, she decides to have a DJ to play music at her party. The DJ charges her R400. Does she have enough money to cover this expense? Show all calculations.
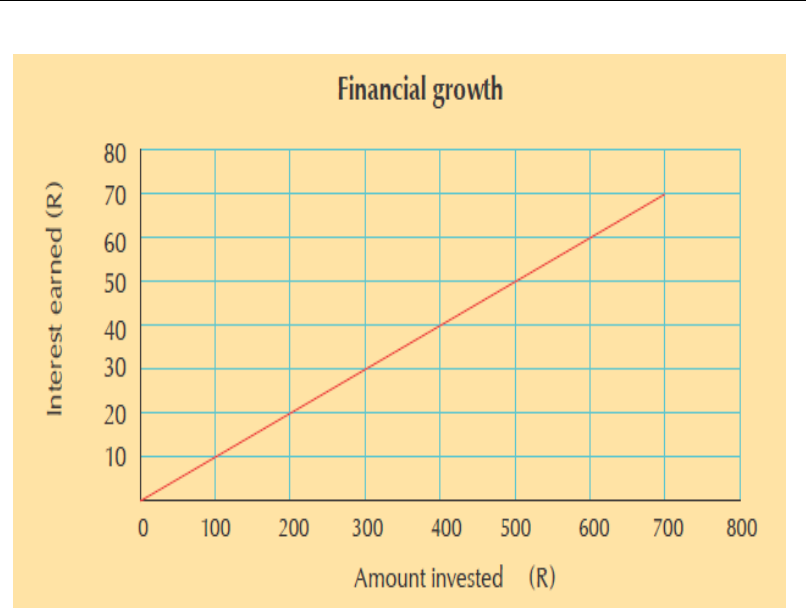
3.11. Thandi and Kevin are thinking of going on a planned adventure hike to Drakensberg. They find the following advertisement from a company who arranges hikes.

SAVE R400 ON 3 DAY DRAKENSBURG HIKE

Normal cost is R1 800.
Trip leaves on Friday 21 September, returns on Sunday 23 September.
Price includes transport, tents, meals, SANParks fees and maybe a free stone from the summit if you make it to the top!
Hikers need to have a moderate fitness level as the hike is about 40 km long.

Additional costs over and above the quoted price include:
Equipment for hiking
Breakfast on the way there
Lunch on the way back home.

		Draw up a budget for both of them, assuming they don't have their own equipment. 3.12. You are planning to drive from Johannesburg to East London in December 2021, to visit an uncle. You will be staying with your uncle for 1 week only, where meals will be provided. The other week will be spent on sight-seeing, where you must arrange for your own accommodation. Your uncle has arranged to pay for a flight back home. You have R4 000 saved in your bank account and R3 500 saved from birthday gifts received over the years. a) How much money do you have available for the trip? b) What are the predicted expenses for your trip? c) Draw up a budget to plan for your trip in to East London in December. Include all income and predicted costs. Include all amounts for each item listed.

WEEK	SECTION	ACTIVITY
4	**INTEREST** Interest: The amount of money that you are charged (by the lender of money, e.g. the bank) for borrowing an amount of money, over a period of time. Interest rate: A percentage charged for the borrowing, or loan, of a sum of money over a given period of time.	**Worksheet 4** 4.1. Thabo borrows R 15 000 from his friend, George, to finish an order for his customers. George offers the following: The loan plus 12% simple interest per annum to be paid back for 3 years. a) Calculate how much Interest Thabo will pay after 1 year. b) Calculate the total interest paid after 3 years. c) Determine the final amount Thabo would have paid back after 3 years. 4.2. Study the graph and answer the questions that follow:

Complete the table below: (Fill in all the missing spaces)

Amount invested(in rands)	100	200	300	400	500
Interest earned (in rands)	10		30		50
(Interest÷Amount)×100 (Interest rate)					

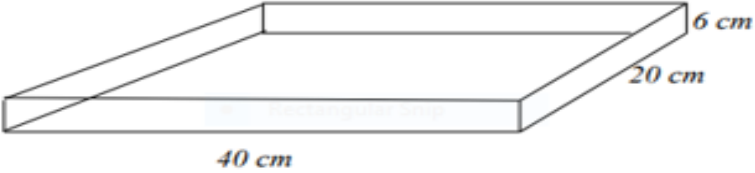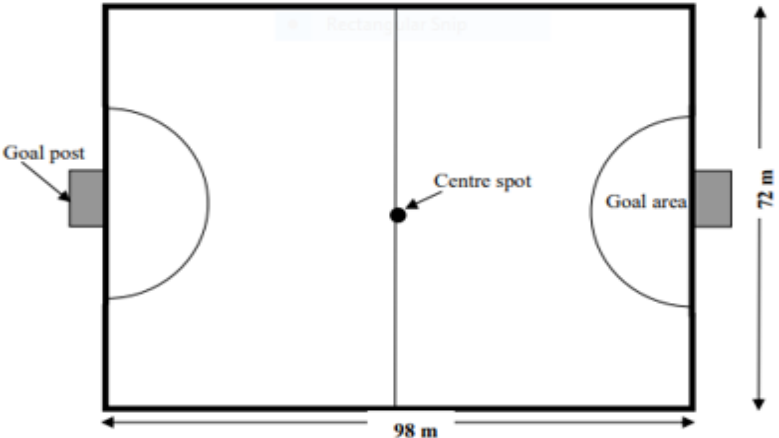4.3. You found the following advertisement in a local newspaper. Answer the following questions.

a) Does the advertisement indicate the percentage of interest that will be charged if the TV is not paid for in cash?

b) What will the balance be once the deposit has been paid?

c) How much will the installments be per month?

d) How much will you have to pay for the TV in total?
Use the formula:
Total to be paid = Deposit + (Installment amount ×number of installments)

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WEEK	SECTION	ACTIVITY
5	**VAT** -Value added Tax -VAT is a form of tax that everybody has to pay when buying goods and services. -VAT is charged at 15%. -Certain items, such as basic foods, like milk, bread, fresh fruit and vegetables, maize Meal, tinned pilchards and sanitary pads are exempt from VAT, which means that they are not taxed. Educational fees, and bus, train and taxi fares are also exempt from VAT. **Terminology** that you need to know before attempting the sums on VAT • **VAT** = Value Added Tax (It is	**Worksheet 5** 5.1. Ms. Zwide purchased some goods at the River Supermarket. Study the till slip and answer the following questions: **The River Supermarket** PO Box 111 0000 Cuckoo Town Tel: (999) 654 1111 **TAX INVOICE** 1 SALAD 29.00 1 ICE TEA 14.50 TOTAL 43.50 VAT @ 15% 6.09 TOTAL DUE 49.59 TOTAL PAID 50.00 CHANGE 0.40 a) Are the prices Vat exclusive or inclusive? Explain your answer. b) Use calculations to check if the VAT was calculated correctly. c) Calculate the final price, incl. VAT for 1 Salad. 5.2. Study the invoice and answer the following. **TAX INVOICE** <table><tr><td>1</td><td>FLOUR SELF RAISING</td><td>R6.89</td></tr><tr><td>250</td><td>ml BUTTERMILK</td><td>R8.99</td></tr><tr><td></td><td>COCKTAIL TOMATOES#</td><td>17.99</td></tr><tr><td></td><td>CAULIFLOWER 330 G#</td><td>R9.99</td></tr><tr><td></td><td>POTATO SALAD</td><td>R45.99</td></tr><tr><td></td><td>COKE LIGHT</td><td>R14.95</td></tr><tr><td></td><td>MILK FULL CREAM#</td><td>R9.99</td></tr><tr><td></td><td>TOTAL</td><td>A</td></tr><tr><td></td><td>VAT INCLUDED @15%</td><td>R17.22</td></tr><tr><td></td><td>Total Price Inc VAT</td><td>R162.00</td></tr><tr><td></td><td>*ZERO RATED ITEMS #*</td><td></td></tr></table> a) List the items that are zero rated? b) Calculate the total cost (A) of the items.

	calculated as a percentage) • **Vat exclusive** price = The price of the goods before the VAT amount is added • **VAT inclusive** price = This is the price of the goods including VAT. **Remember:** For VAT exclusive price, 15% is to be added to get the final price. For VAT inclusive price, 15% is already added in the final price.	c) Use calculation to check if VAT is correct. 45 5.3. The price of a cell phone including VAT is R 1424.99. Determine a) The original price of the printer excluding VAT. b) The VAT included in the price.

WEEK	SECTION	ACTIVITY
6	**Perimeter and Area**	**Worksheet 6**

6.1. Mary will need a tray to display or deliver her cupcakes to customers. Below is a tray with the following dimensions that she will be using:

length = 40 cm, breadth = 20 cm and height = 6 cm.

You may use the following formulae:
- **Perimeter = 2 (l + w)**
- **Area = l × b**

a) Calculate the perimeter of the tray.
b) Calculate the area of the base of the tray.

6.2. Two weeks before the final hockey match a concert was held on the hockey field. The stadium manager inspected the field after the concert and found that some of the lines on the field were unclear and part of the grass on the field was damaged.

All the outside boundary lines (bold lines) have to be re-marked and one of the goal areas (semicircle) has to be re-grassed.

The dimensions of the hockey field are:

length = 98 m   breadth = 72 m

The following formulae may be used:

Perimeter of a rectangle = 2(l + b)

Area = π × r² and π = 3,142

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(a) Determine the total length of the boundary lines of the hockey field that need to be re-marked.

b) Calculate the area of the ONE goal area that has to be re-grassed, if the radius is 16 m

6.3. A circular glass tabletop is cut from a square piece of glass that is 136 cm by 136 cm as shown below.
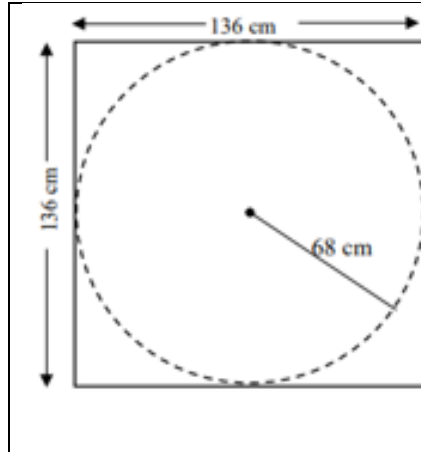
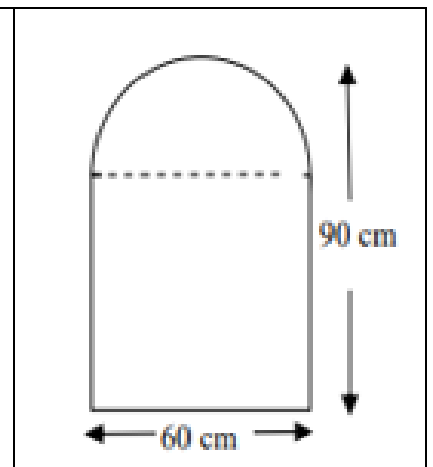• A flexible aluminium strip is attached to the circular edge of the tabletop to form an edging.

Study the diagram above and answer the questions that follow:

a) Determine the length of the diameter in mm of the table.

b) Calculate in centimetres, the perimeter of the square piece of glass.
You may use the formula = Perimeter = 4 × length of side

c) Calculate the area (in cm²) of the glass tabletop.
You may use the formula: **Area = π × r² and π = 3,142**

d) Calculate the circumference (in cm) of the glass tabletop.
You may use the formula:
Circumference of a circle = 2 × π × radius

6.3. A bedroom mirror, consisting of a square-base section and a semicircular section on top, is shown in the sketch below.

| a) Write down the length of the radius of the semicircular section. b) Calculate the area of the mirror. You may use the formula: Area of the mirror = area of semicircle + area of square = ½ ×π × (diameter)² + (side)² using π = 3,142 | |

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| WEEK	SECTION	ACTIVITY
7	**Perimeter, Area and Volume**	**Worksheet 7** 7.1. The Grade R teacher is feeling creative. She wants to divide a patch of playing ground into a sandpit for her learners to play in and the flower bed. The patch of ground is 6,5 m wide and 4,5 m long from front to back. She needs to fence the whole area off to prevent the dogs from digging it up. **She will leave a 40 cm border on all sides.** Study the diagram above and answer the questions that follow: a) Calculate in metres length of fencing she needs to enclose the entire perimeter. You may use the following formula: **Perimeter =2×$length$ +2×$breadth$** b) Calculate in metres, the area of the Flower bed and the Sand pit. You may use the following formula: **Area = ½× base × height**

7.2. Zimkitha buys some material to make dish cloths and tea towels which she sells at a local flea market.
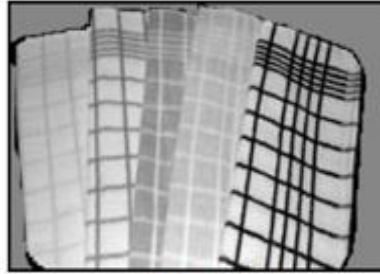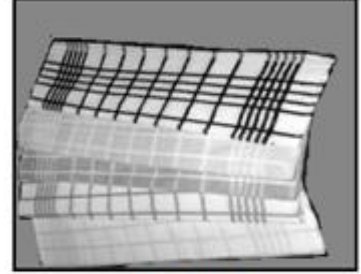
Dish Cloth   Tea Towel

The material she buys has a fixed width of 120 cm and is cut into any required length. She cuts the material into rectangular pieces of 30 cm × 45 cm to make the tea towels and   30 cm × 30 cm to make the dish cloths, as shown in the photographs above.

You may use the formulae:
- **Perimeter of a rectangle = 2(length + breadth)**
- **Area of a rectangle = length × breadth**

a) Lebogang wants to make a decorative border on some of the tea towels.
Calculate the perimeter of a tea towel.

b) Calculate the area of the material needed to make ONE tea towel.

7.3. Mr. J Khoso owns a plot, as shown in the diagram below (not drawn to scale). His house (D) is on the eastern side of the plot. Also, on the plot is a cattle kraal (A), a circular water tank (B), and a vegetable garden (C).

Diagram of Mr J Khoso's plot
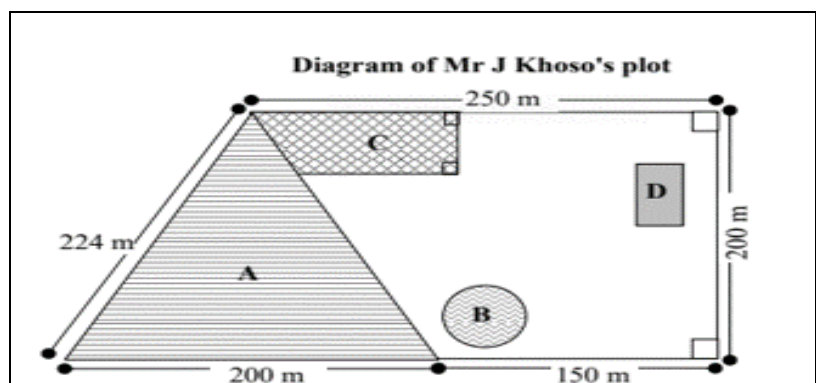
A – Cattle Kraal
B – Water tank
C – Vegetable garden
D – House

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		a) Determine the perimeter of Mr. Khoso's plot. b) Determine the area of the cattle kraal (A). Use the formula: Area of a triangle = ½ × base × height

WEEK	SECTION	ACTIVITY
8	Scale	**Worksheet 8** 8.1. Use the bags below and answer the questions that follow: a) Measure the width of the school bag in Diagram 1 and use the scale to calculate the width of the school bag. b) Measure the school bag in Diagram 2 and use the scale to calculate the width of the school bag. c) What do you notice about the answers for a). and b).? d) Measure the width of the school bag in Diagram 3 and use the scale to calculate the width of the school bag. e) Measure the school bag in Diagram 4 and use the scale to calculate the width of the school bag. f) What do you notice about the answers for d). and e).? g) Write a sentence to explain what you have observed as a result of your calculations.

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8.2. Study the shopping centre below and answer the questions that follow.

Grocery store	Music shop	Thabo`s Sports Ware	Fati`s Clothing shop	
Coffee shop				Main Road
Toilets		**PARKING**		
Restaurant	Shoe store	Physiotherapy	Health and Fitness center	

N
S ⊕ E
W

a) If you are travelling north along Main Road, would the parking be on your right or on your left?
b) Which shop is on the right of the physiotherapy?
c) Describe the position of the Coffee Shop in relation to the Toilets.

WEEK	SECTION	ACTIVITY
9	Maps	**Worksheet 9**
		9.1 Study the map below and answer the questions that follow:

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a) Write down the type of scale used in the plan.
b) In which general direction is Corinth from Savannah.
c) Measure the distance between Savannah and Corinth in cm.
d) Calculate the actual distance, as the crow flies, between these between Savannah and Corinth in km.

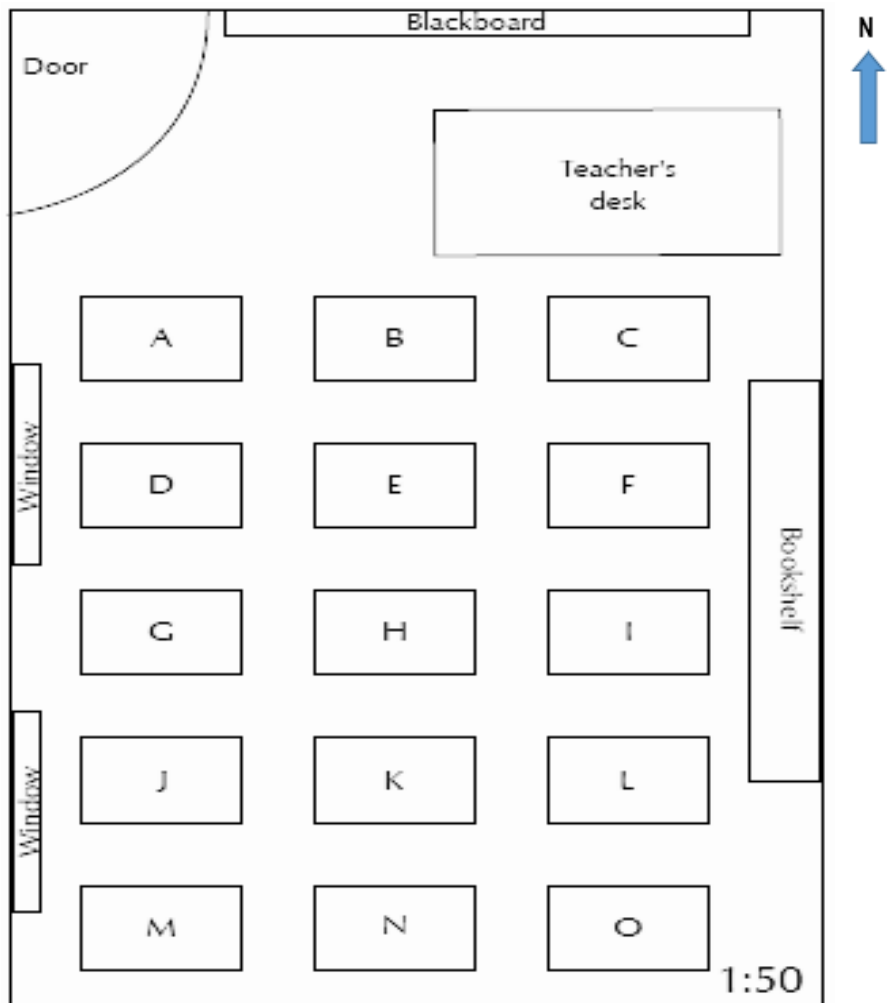9.2. Study the street m ap below and answer the questions that follow.
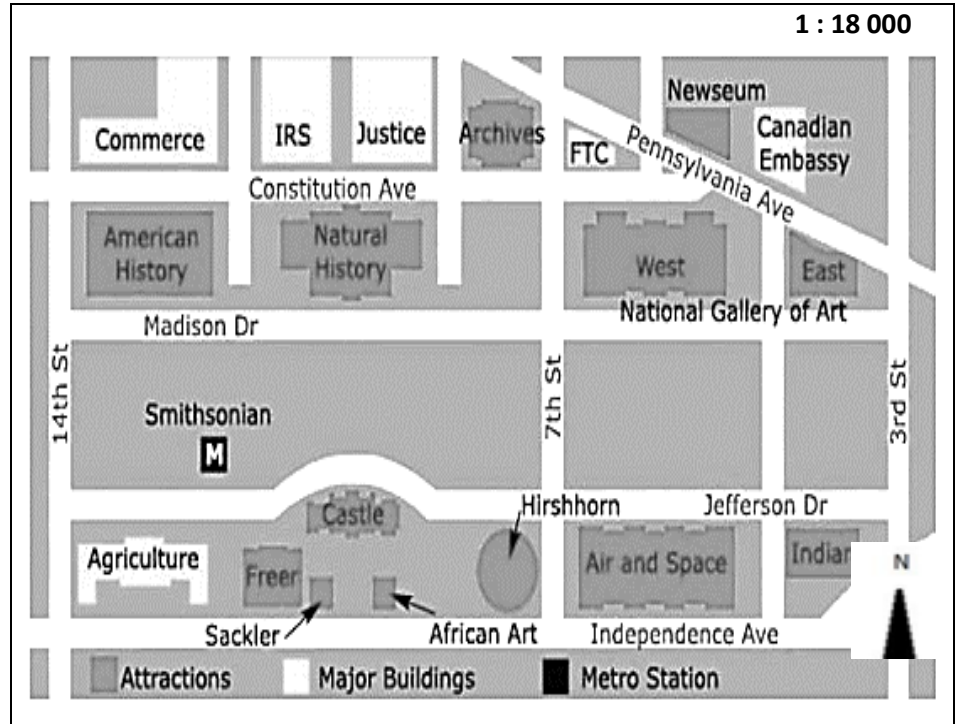
1 : 18 000

a) Identify the type of scale used in the map.
b) In which general direction is Metro station from Smithsonian.
c) The entrance to the Metro is in Jefferson Drive. Describe the route to get from the Metro to the Archives.
d) The scale of the map is 1:8 000. If the distance from Constitution Avenue to Independence Avenue along 7th street is 483 m, what is the distance on the map, correct to 1 decimal place?

9.3. Study the classroom plan attached below and answer the Questions that follow:
a) Write down the type of scale used in the plan.
b) Explain the meaning of the scale 1:50
c) How many learners can be seated in this class if there is one learner at each desk?
d) In which general direction is the bookshelf from the door.
e) Which learners are sitting closest to the windows?

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f) Your friend forgets her school bag in the classroom and asks you to go and fetch it for her. She gives you the following directions: "Walk in through the door and turn right after the second row of desks. Walk past two rows of desks and look to your left, look over the desk next to you. My bag is on the floor."
Where did she leave her bag?

The classroom plan:

9.4. Study the School ground plan below and answer the questions that follow:

a) What subject would you be studying if you are in classroom B2?
b) Write down the type of scale used in the school ground plan.
c) Measure the width and length of the sports field in mm.
   Width = 50 mm. Length = 100 mm
d) Use the scale to estimate the real (actual) width and length of the field in metres.
e) Tebogo, a new learner, has started at your school. You are in the Science classroom, A1, when the break bell rings. Explain to Tebogo how to get to the tuck-shop.

WEEK	SECTION	ACTIVITY
10	Plans	**Worksheet 10** 10.1. Study the floor plan of the house below and answer the questions that follow. a) What is the compass direction of bedroom 3 from the lounge? b) How many windows are shown on the floor plan? c) How many interior doors are shown on the floor plan? d) Using your ruler, determine the dimensions of bedroom 1 on the floor plan. e) Using the given scale, calculate the actual area of bedroom 1 in square meters (m²). You may use the formula: **Area of rectangle = length × breadth**

10.3. The diagrams below show a set of labelled assembly instructions, not in order of assembly, to build a toy car with toy blocks.
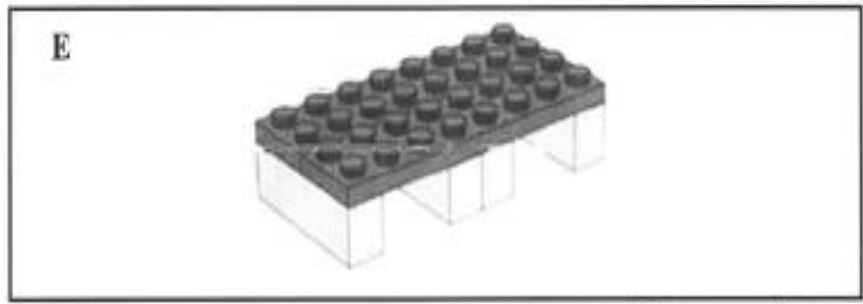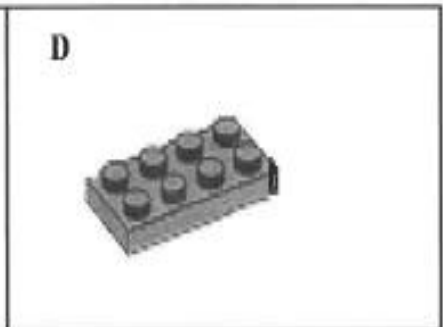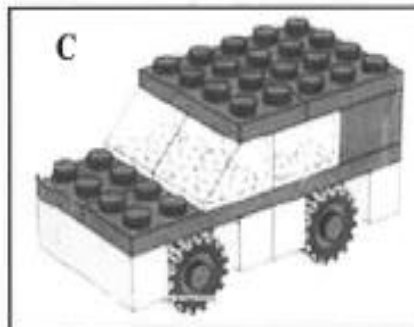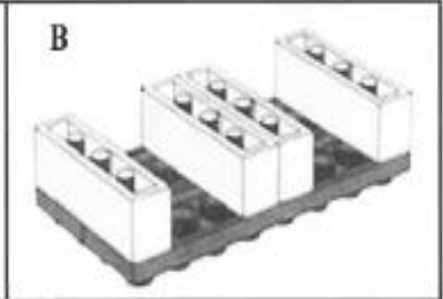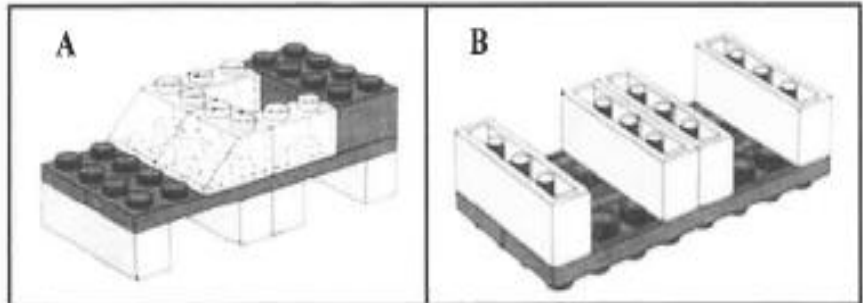
a) Write down the correct order of the assembly instructions to build the toy car, using the letters A, B, C, D and E.

b) Which two letters (A, B, C, D and E) fit the instruction, 'Flip over the part – assembly'.

GAUTENG PROVINCE
EDUCATION
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REMOTE LEARNING EXERCISES/WORKSHEETS

EXERCISES AND MEMORANDA

TEACHER GUIDE

TERM 4

SUBJECT: MATHEMATICAL LITERACY

GRADE: 10

TOPIC(S):   FINANCE

WEEKS: 1 – 4

WEEK	SECTION	ACTIVITY
1 – 2	Banking, Loans and Investment	**Worksheet 1** 1.1. Pooja is a RawBank customer. She received the new fee structure effective from 1 May 2020. Use the fee structure attached below to answer the following questions. a) Write down how much it will cost to withdraw R500 from a supermarket till point. b) Calculate the amount Pooja paid for administration fees in 2019. c) Determine the percentage increase in fees for withdrawing money from RawBank ATM in 2020 compare to 2019. You may use the formula: $$\textbf{Increase in fees} = \frac{\textbf{2019 fee} - \textbf{2020 fee}}{\textbf{2019 fee}} \times \textbf{100}\%$$ d) State TWO valid reason why Pooja may draw money from another bank's ATM when it cost more than using her own bank's ATM. e) Give one valid reason why it cost money to deposit money into a bank.

RawBank FEE STRUCTURE FOR 2019 AND 2020

TRANSACTION TYPE	2019 FEE	2020 FEE
Administration fee	....	R5,25 (25c increase)
Minimum account balance	R25,00	R25,00
CASH WITHDRAWAL		
PnP/Shoprite/Checkers/Boxer till points (Fixed)	R1,25	R1,30
RawBank ATM	R5,50	R6,00
Other Bank's ATM	R8,00	.... (50c increase)
DEPOSITS		
Notes (ATM)	70c per R100	80c per R100
Notes/Coins (Branch)	R1,40 per R100	R1,70 per R100
Special clearance cheque	R80,00	R90,00
TRANSFERS, PAYMENTS/PURCHASES		
Debit orders	R3,20	R3,20
Transfer (Branch)	....	R3,60 (20c increase)
Transfer (ATM)	FREE	FREE
Purchase at local/International machines	FREE	FREE

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1.2.   Use the bank charges provided in the extract below and answer the questions that follow:

Bank Charges for FNB Smart Account (Zero Monthly Fee)

TRANSACTION	FEE
Cash withdrawals FNB ATM	
Value: 0 – R500,00	R7,50
Value: R500,01 – R1 000,00	R15,00
Value: R1 000,01 +	R22,50
Cash withdrawals FNB Mini-ATM	
Value: 0 – R500,00	R2,50
Value: R500,01 – R1 000,00	R7,50
Other bank's ATM	R5,00 + FNB ATM fee
Cash withdrawal with purchase (Cashback at Shoprite, Checkers, Pep, Pick 'n Pay)	R2,50
FNB branch cash withdrawal	R25,00 +1,15% of value (maximum R3 000)
Cash deposits	
FNB ATM with automated deposits (ADT)	0,65% of value (minimum R5,00)
FNB Branch	1,15% of value (minimum R17,75)
Mini-statement (FNB ATM – view and print)	R2,50
Statement at FNB Branch	R5,50 per page
Unpaid debit order	R9,50
Card replacement fee	R60,00
Balance enquiry (FNB ATM)	Free
Prepaid purchases (FNB ATM)	Free
Internal debit order	R5,00
External debit order	R12,50
Send money to an FNB eWallet	R9,00
Debit card purchases at retailers	R2,50

a)   Calculate your bank charges if you use your debit card to buy groceries every week for 4 weeks.

b)   Determine the bank charges if you always make two cash withdrawals at   an FNB ATM twice a month: One for **R450** and another one for **R1 200**.

c)   During a certain month Gaby had to pay school fees. She had to withdraw cash to the value of R2 800 in an FNB Branch because the limit on her   card is R1 500 for cash withdrawal at an ATM. Determine the bank charges for this withdrawal.

d)   You are in a place where an FNB ATM is not accessible. You have to then make use of another bank's ATM to withdraw cash of R850. How much did you pay for bank charges for the withdrawal?
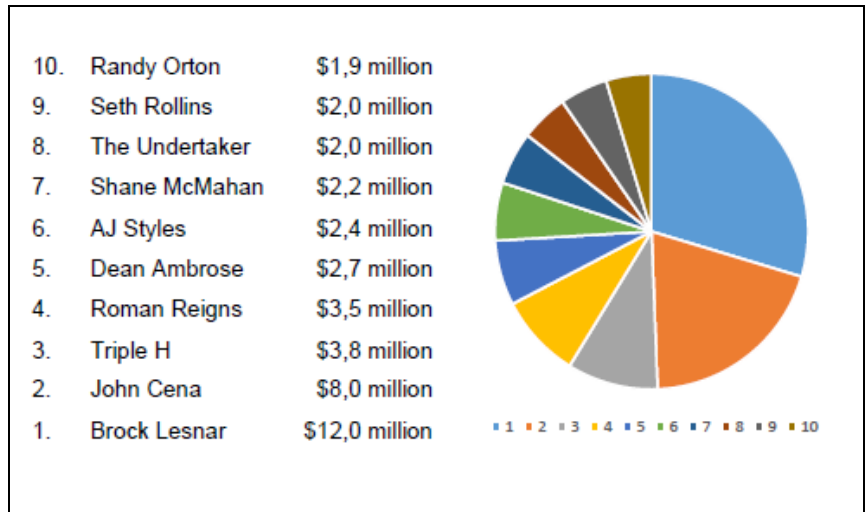
1.3.   Juliet opened an Action Cash Account. Look at her bank statement for March / April and try to make sense of the information.

ACTION CASH					
Giverny Phala P.O Box 60530 THOLONGWE 0734		Statement From 31 March 2021 to 15 April 2021 Action Cash Account number: **012-345-67890**			
Date	Code/Description	B/Fees	Debits	Credits	Balance
31/03/2021	M. Mogano			1 500,00	2 220,00
01/04/2021	Fashiongalore		450,00		1 770,00
01/04/2021	M. Mogano		230,00		1 540,00
01/04/2021	Teendesign		170,00		1 370,00
01/04/2021	E-Cell Phonesavvy		209,87		1 160,13
01/04/2021	ATM withdrawal	5,00	150,00		1 005,13
08/04/2021	ATM withdrawal	5,00	150,00		850,13
15/04/2021	ATM withdrawal	5,00	240,00		605,13
15/04/2021	Service fee	37			568,13

a) List all the **transaction** dates reflected on this account.
b) Explain why the deposit is listed as a credit.
c) Calculate Juliet`s opening balance before M. Mogano deposited R1 500,00 into her account.
d) According to the statement, how much did Juliet spend on service fee?
e) Despite the service fee, what is the advantage of having a bank account?

WEEK	SECTION	ACTIVITY
3 – 4	Representation and Analysis of data	**Worksheet 4** 4.1. The table below shows the shoe sizes of a Grade 11 Mathematical Literacy class. _(see table below)_ Use the above information to answer the questions that follow: **a)** Explain the term _frequency_ in this context. **b)** Determine the number of learners in the class. **c)** Write down the modal shoe size for this class. 4.2. Water has become a critical issue in South Africa, especially in the Western Cape and the Eastern Cape, where dam levels have dropped tremendously over the past few years. Below is a table showing the major supply dams in the Western Cape. _(see table below)_ Use the table above to answer the questions that follow: **a)** Determine the value of **A** (the percentage storage for 25 June 2018). **b)** Describe a possible trend for the period in terms of the total water stored. **c)** Give ONE possible reason for the low dam levels from 2015 to 2017. **d)** Calculate the mean percentage of the dams in 2016.

Table for 4.1:

Shoe Size	4	5	6	7	8	9
Frequency	3	12	22	18	3	2

Water storage in the major dams comprising Western Cape water supply system

Major dams	Capacity (Mℓ) Mega-litre	Storage				
		% 25 June 2018	% 25 June 2017	% 25 June 2016	% 25 June 2015	% 25 June 2014
Berg River	130 010	67,8	36,5	38,7	60,0	100,2
Steenbras Lower	33 517	46,5	30,2	37,1	55,4	72,6
Steenbras Upper	31767	96,5	60,6	65,8	57,4	101,3
Theewaterskloof	480 188	30,4	18,6	33,9	54,9	98,5
Voëlvlei	164 095	37,6	18,4	27,4	39,2	81,6
Wemmershoek	58 644	71,2	37,5	50,1	53,2	89,8
Total stored	898 221	383 263	218 433	320 741	474 301	846 413
% Storage		A	24,3	35,7	52,8	94,2

4.3. The graph below shows the highest-paid WWE wrestlers in 2019.

10.	Randy Orton	$1,9 million
9.	Seth Rollins	$2,0 million
8.	The Undertaker	$2,0 million
7.	Shane McMahan	$2,2 million
6.	AJ Styles	$2,4 million
5.	Dean Ambrose	$2,7 million
4.	Roman Reigns	$3,5 million
3.	Triple H	$3,8 million
2.	John Cena	$8,0 million
1.	Brock Lesnar	$12,0 million

1 2 3 4 5 6 7 8 9 10

a) Name the type of graph represented above.
b) Is the data represented in the graph numerical or categorical?
c) Calculate the median earnings of the top 10 wrestlers.
d) Write down the maximum amount earned by a wrestler in 2019
e) Calculate the mean (average) earnings of the top 10 wrestlers
f) Determine the range in earnings of the top 10 wrestlers in 2019.
g) Determine the modal earnings in 2019.
h) Calculate Brock Lesnar's earnings as a percentage of the total earnings.

4.4. The graph below shows the number of houses sold in different locations **A, B, C, D** and **E**.

HOUSES SOLD

NUMBER OF HOUSES SOLD

LOCATION
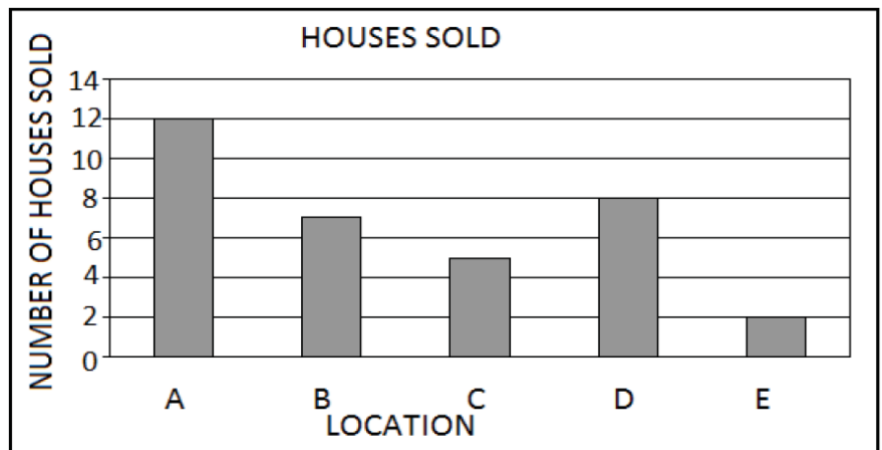
Use the graph above to answer the following questions.

a) Write down the type of graph that was used to represent the information.
b) State whether the data shown in the graph is numerical or categorical.

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c) Complete the table below:

Location	A	B	C	D	E
No. of houses	12	…	…	…	…

d) Arrange the number of houses sold in descending order.
e) Calculate the total number of houses that was sold in all the locations.
f) Name another type of graph that would depict the data in the same light.