

2020



**education**

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Noord-Wes Departement van Onderwys  
North West Department of Education  
**NORTH WEST PROVINCE**

# MATHEMATICAL LITERACY

The booklet consists of extracted question 1's  
from the following question papers:  
SC June, NSC Feb-Mar's, Prov. Prep's, NSC  
Nov, Prov. Jun





**QUESTION 1**

SC JUNE 2017

- 1.1 Tyrone buys chocolates in bulk to make gift baskets containing different chocolate bars to sell. He buys boxes that contain bars of Peppermint Crisp, Bar-One, Kit Kat and Cadbury 80 g chocolate slabs.

*Picture of a gift basket with chocolate bars*



- 1.1.1 Determine the total price of a box with Peppermint Crisp bars if there are 40 bars in a box and the unit price of a bar is R8,70. (2)
- 1.1.2 Explain the term profit. (2)
- 1.1.3 A box with Kit Kat bars costs R435,04. To determine the selling price, Tyrone increases the cost price by 40%. Determine the amount that he adds to the cost price. (2)
- 1.1.4 Tyrone makes a gift basket containing the following items: (2)

ITEMS	UNIT COST PRICE
Bar-One	R10,04
Peppermint Crisp	R8,70
Kit Kat	R20,66
Cadbury 80 g chocolate slab	R6,73
Empty basket	R29,99

- (a) Determine the total cost price of the gift basket. (3)
- (b) He sells 230 of these gift baskets and receives a total income of R22 770. Determine the selling price of each basket. (2)

1.2 MrPiedt earns an annual taxable income of R542 096,76.

TABLE 1 below is a tax table that shows how much personal income tax he needs to pay.

**TABLE 1: INCOME TAX RATES FOR INDIVIDUALS**  
**2017 TAX YEAR 1 MARCH 2016-28 FEBRUARY 2017**

TAX BRACKET	TAXABLE INCOME (R)	TAX RATES (R)
1	0-188 000	18% of taxable income
2	188 001-293 600	33 840 + 26% of taxable income above 188 000
3	293 601-406 400	61 296 + 31% of taxable income above 293 600
4	406 401-550 100	96 264 + 36% of taxable income above 406 400
5	550 101-701 300	147 996 + 39% of taxable income above 550 100
6	701 301 and above	206 964 + 41% of taxable income above 701 300

[Adapted from www.SARS.gov.za

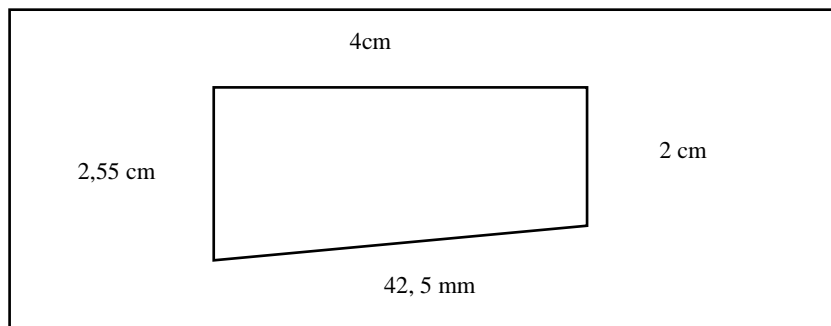
1.2.1 What does the acronym SARS stand for? (2)

1.2.2 Write down the minimum amount of tax payable for tax bracket 3. (2)

1.2.3 Calculate MrPiedt's average monthly taxable income. (2)

1.2.4 Identify the tax bracket applicable to MrPiedt's taxable income. (2)

1.3 A scaled drawing of a piece of land, using a scale of 1:200, is shown below.

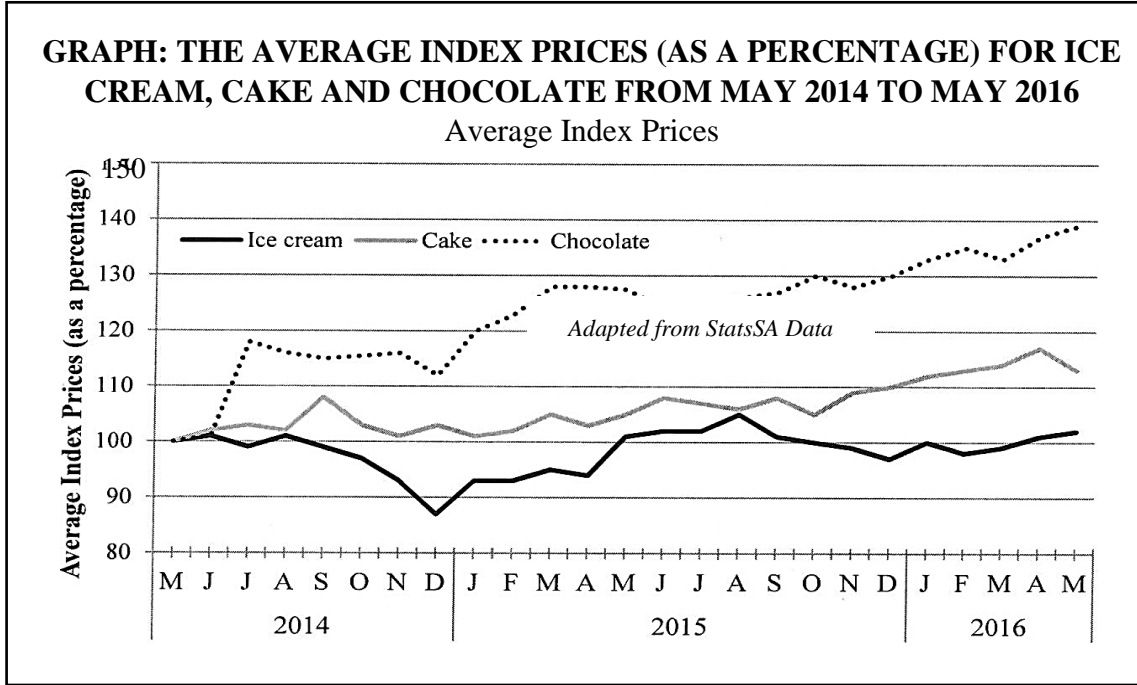


1.3.1 Explain the meaning of this scale. (2)

1.3.2 Calculate the perimeter (in centimetre) of the scaled drawing of the piece of land. (2)

1.4 Stats SA has released data showing that the average price of an 80-gram slab of chocolate has risen by 39% from May 2014 to May 2016.

The graph below shows indexes used to compare the average price of an 80-gram slab of chocolate with the average prices for cake and ice cream. The average index price, as at May 2014, was taken as 100%.



- 1.4.1 Give the date when the average index price for chocolate was 120%. (2)
- 1.4.2 Describe the change in the average price of cake from April 2016 to May 2016. (2)
- 1.4.3 Write down the average index price for ice cream for October 2015. (2)

[30]

**QUESTION 1**

NOVEMBER 2017

1.1 Definitions of some mathematical concepts are listed in TABLE I below.

TABLE 1: DEFINITIONS OF SOME MATHEMATICAL CONCEPTS

LETTER	DEFINITIONS
<b>A</b>	Middle value in an ordered data set
<b>B</b>	Difference between the maximum and minimum values in a data set
<b>C</b>	Distance from the centre of a circle to the circumference of the circle
<b>D</b>	Positive difference between the income and the expenditure amounts
<b>E</b>	Maximum distance between two points on the circumference of a circle
<b>F</b>	Amount received from the sale of goods or services
<b>G</b>	Sum of the data values divided by the number of data values

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

1.1.1 Profit (2)

1.1.2 Mean (2)

1.1.3 Length of the radius (2)

1.2 A gold coin shop buys and sells gold Kruger rand coins. The shop bought a one-ounce gold coin for R14 960 at 10:15 and sold it for R 18 700 5 hours and 50 minutes later.

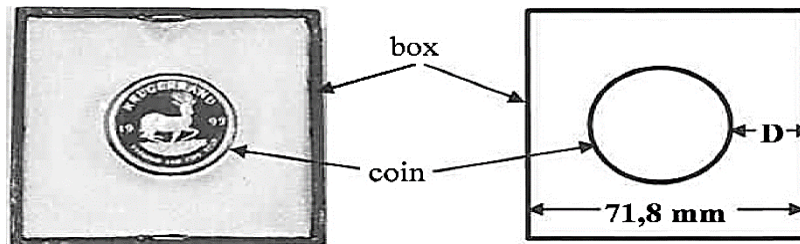
1.2.1 Calculate the profit that the shop made on this one-ounce gold coin. (2)

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

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

Photograph of Gold coin in Square Box


Diagram



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

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

1.3 Naomi buys a 2 bottle of concentrated juice.  
 She adds water to make 14 of diluted juice at a total cost of R44,95.  
 She wants to serve the diluted juice in glasses.  
 Each glass will contain 0, 175 of diluted juice.



[Adapted from [graphics24.co.za](http://graphics24.co.za)]

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

1.3.2 Determine in the simplified form, the ratio of:  
*volume of concentrated juice : volume of water* (2)

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

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

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

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

[Source: [www.myweather2.com](http://www.myweather2.com)]

Use TABLE 2 above to answer the questions that follow.

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

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

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

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

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


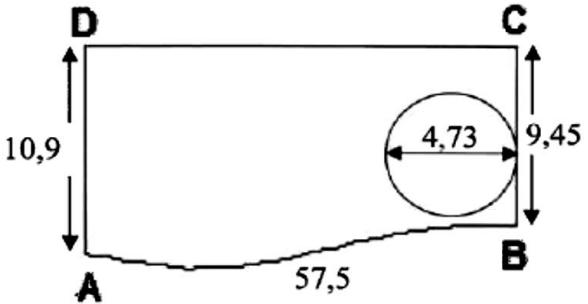
**QUESTION 1FEB-MAR 2018**

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

[Source: [www.rochester.co.za](http://www.rochester.co.za)]

- 1.1.1 Express (in years) the total repayment period for this offer. (2)
- 1.1.2 Determine the total repayment cost for this dining room suite. (2)
- 1.1.3 The advertised price for this dining room suite is R29 999,00. The store offers 15% discount on the advertised price if the purchase is settled immediately in ONE payment.
- Calculate the value of the discount amount offered. (2)
- Calculate the value of the discount amount offered. (2)

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

<p><b>CIRCULAR SWIMMING POOL</b></p>  <p>[Source: <a href="http://www.megaide.se">www.megaide.se</a>]</p>	<p><b>SKETCH OF THE SWIMMING POOL IN THE GARDEN WITH DIMENSIONS (in metres)</b></p>  <p><b>NOTE: The curved distance for AB is 57,5 m.</b></p>
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- 1.2.1 Give, in simplified form, the ratio of distance **AD** to distance **CB**. (2)
- 1.2.2 The perimeter of **ABCD** is 125,92 m.  
Calculate the distance **CD**. (2)



- 1.2.3 Write down the length of the radius of the pool. (2)
- 1.2.4 A fence will be erected along the curved side AB at a cost of R97,56 per running metre. Calculate the total cost of erecting the fence. (2)

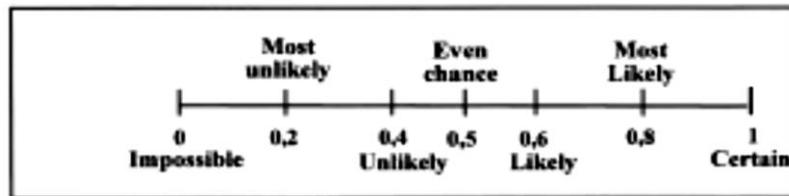
1.3 TABLE 1 below shows the weather forecast with maximum and minimum temperatures for three cities for 29 April 2017.

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

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

Use TABLE 1 above to answer the questions that follow:

- 1.3.1 Identify the city with the lowest temperature (2)
- 1.3.2 Calculate the temperature range for City C. (2)
- 1.3.3

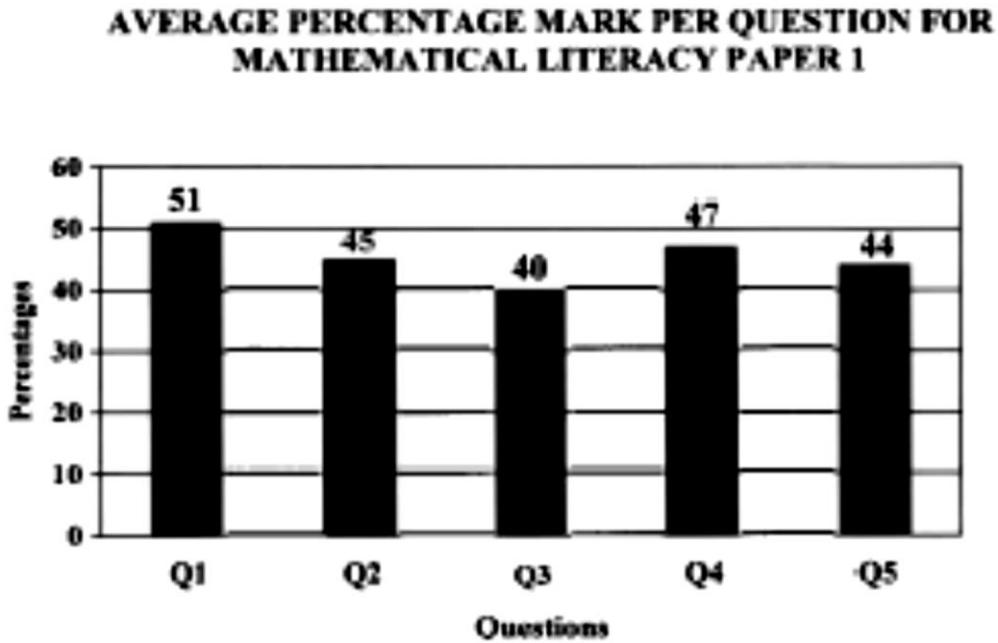


A probability scale in words and as decimal fractions is given above.

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

- (a) Identify the city that has NO chance of rain. (2)
- (b) Write down, in words, the chance of rain for City A. (2)

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



*[Source: 2016 NSC Examination Diagnostic Report]*

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

- 1.4.1 Name the type of graph used to represent the data. (2)
- 1.4.2 Express the number of candidates who wrote this paper in words. (2)
- 1.4.3 Identify the question in which the candidates obtained the second lowest average percentage mark. (2)
- 1.4.4 Determine (in minutes) the average time per mark required for this paper. (2)

**[30]**

**QUESTION 1**

1.1 The graphs below show the water tariffs for Cape Town and Johannesburg. Study the graphs below and answer the questions which follow.

<b>CAPE TOWN</b>			
	<b>Kilolitres (kl) used per month</b>	<b>Price</b>	<b>Increase (%)</b>
Step 1	0–6	Free ■ R4,56	New
Step 2	6–10,5	■ R16,54 ■ R17,75	7,3%
Step 3	10,5–20	■ R23,54 ■ R25,97	10,3%
Step 4	20–35	■ R40,96 ■ R43,69	6,6%
Step 5	35–50	■ R66,41 ■ R113,99	71,6%
Step 6	> 50	■ R200,10 ■ R302,24	51%
<b>JOHANNESBURG</b>			
	<b>Kilolitres (kl) used per month</b>	<b>Price</b>	<b>Increase (%)</b>
Step 1	0–6	Free ■ R7,14	New
Step 2	6–10	■ R7,14 ■ R7,58	6,2%
Step 3	10–15	■ R12,07 ■ R13,17	9,1%
Step 4	15–20	■ R17,65 ■ R19,63	11,2%
Step 5	20–30	■ R24,03 ■ R26,96	12,2%
Step 6	30–40	■ R25,81 ■ R29,22	13,2%
Step 7	40–50	■ R32,27 ■ R37,11	18%
Step 8	> 50	New ■ R38,72	20%
<b>Key: 2016/17 ■ 2017/18 ■</b>			

[Adapted from: www.graphics24.co.za]

- 1.1.1 State the type of the graph used to represent this data. (2)
- 1.1.2 Arrange Cape Town’s percentage increase in descending order. (2)
- 1.1.3 Identify the step that indicates the largest increase (in rand) in Cape Town’s tariff from 2016/17 to 2017/18. (2)
- 1.1.4 Determine in which ONE of the two cities water is more expensive. (2)
- 1.1.5 Calculate the cost of 3,5 kl of water in Johannesburg during 2017/18. (2)
- 1.1.6 Is the data given numerical or categorical? (2)

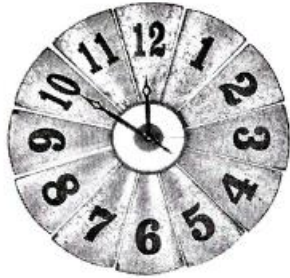
1.2

The price list given below shows the selling price and profit for different types of clocks. Study the price list and answer the questions that follow.

**CLOCK A**

Selling Price: R3 350,00

Profit: R914,00

**CLOCK B**

Selling Price: R220,00

Profit: R60,00

**CLOCK C**

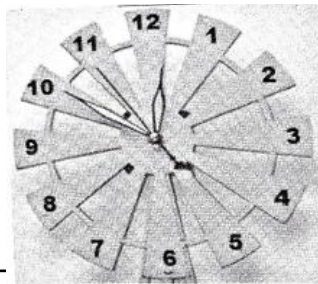
Selling Price: R2 100,00

Profit: R573,00

**CLOCK D**

Selling Price: R5 950,00

Profit: R1 623,00

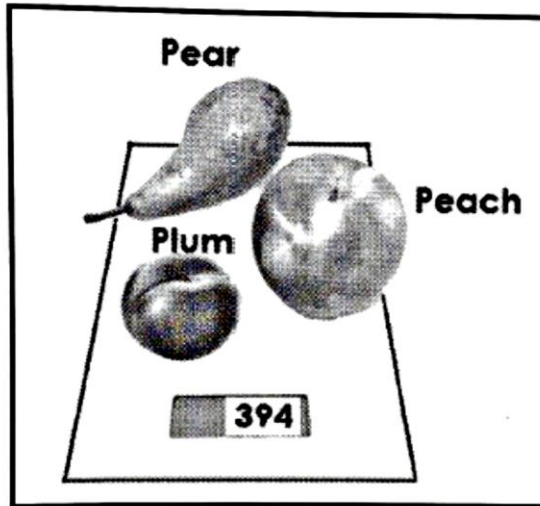


**All prices exclude 14% VAT.**

[Adapted from: [www.pricecheck.co.za](http://www.pricecheck.co.za)]

- 1.2.1 Explain the term *cost price*. (2)
- 1.2.2 Calculate the cost price of **CLOCK A**, excluding VAT. (2)
- 1.2.3 Write down the time on **CLOCK B**, using the 24-hour format if it represents the time in the evening. (2)
- 1.2.4 Calculate the total profit made if all four clocks are sold. (2)

- 1.3 The photograph below shows an electronic kitchen scale (in grams) with three fruits placed on the scale.



The mass of the pear is 128 g  
 The mass of the plum is half the mass of the pear.

**NOTE:** 1 kg = 1 000 g

[Adapted from: [www.pricecheck.co.za](http://www.pricecheck.co.za)]

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

- 1.3.1 Convert the total mass of the fruit into kg. (2)
- 1.3.2 The pear is removed from the kitchen scale. Write down the new reading (in grams) shown on the kitchen scale. (2)
- 1.3.3 Show how the mass of 202 g for the peach was calculated. (3)
- 1.3.4 Determine the probability of randomly selecting a banana from the fruit placed on the kitchen scale. (2)
- 1.3.5 Write down the simplified ratio of the total mass of fruit to the total mass of the pear. (2)

[31]

**QUESTION 1: Basic calculations**

Modified and Adapted

- 1.1 Joyce is having a monthly allowance of R500,00 from the bursary she got. Out of her allowance she bought monthly toiletries as shown below:

ITEM	UNIT COST PRICE
20ml Cologne Spray	R69,99
10 g Bath soap	R15,07
Sensodyne toothpaste	R21,00
1 packet of hand wipes	R10,95
4 rolls of 2-ply toilet paper	R39,98
<b>TOTAL</b>	<b>??</b>

Use the information in TABLE 1 to answer the questions that follow.

- 1.1.1 Which items are more than ten rands but less than twenty rands? (2)
- 1.1.2 Explain the term monthly allowance. (2)
- 1.1.3 Determine the total cost of her monthly toiletries and how much will she be left with after buying the toiletries. (3)
- 1.1.4 Calculate the estimated total cost of her toiletries if it is projected to increase by 4,5%. (3)
- 1.2 Three friends live in the same house. They go shopping and buy 1 packet of washing powder at R18,99 per packet, 2 bottles of milk at R15,20 each and 6 bread rolls at R0,85 per roll.
- 1.2.1 If they share the cost of the groceries equally amongst the three of them, write a number sentence to describe how much money each person will have to pay towards the groceries. (2)
- 1.2.2 Calculate how much each person will have to pay towards the groceries. (2)

1.3 A meter taxi has the following flat rates:

- R3,00 flat-rate
- R8,50 per km travelled

The table below represents the distance travelled against the cost of the ride. The first two blocks in the table have been completed for you.

<b>Distance travelled (km)</b>	1	2	3	4	10	20	30	40
<b>Cost of the ride</b>	R11,50	R20,00	A	R37,00	B	C	R258,00	D

1.3.1 Complete the values of A, B, C and D. (3)

1.3.2 Construct a formula to represent the cost of a trip for this taxi. (4)

1.4 Top five earning soccer players in South Africa

Rank per wage	Name of the player	Club/Team	Monthly Wage (in Rands)
5	SiphiweTshabalala	Kaizer Chiefs	380 000,00
3	EjikeUzoenyi	Bidwest Wits	450 000,00
4	Steven Pienaar	Bidvest Wits	425 000,00
5	Anthony Laffor	MamelodiSundowns	380 000,00
<b>X</b>	ItumelengKhune	Kaizer Chiefs	480 000,00
2	TekoModise	Cape Town City	450 000,00

*By Tom Head -2017-08-30*

Use the above TABLE 1 to answer the questions that follow.

1.4.1 What is the rank per wage of ItumelengKhune (X) (2)

1.4.2 What is the probability of a top five earning player in South Africa coming from Orlando Pirates? (2)

1.4.3 Write down the list of players according to their monthly wage in ascending order. (2)

1.4.4 Calculate the difference of monthly wage of highest earning player and lowest earning player. (3)

**[30]**

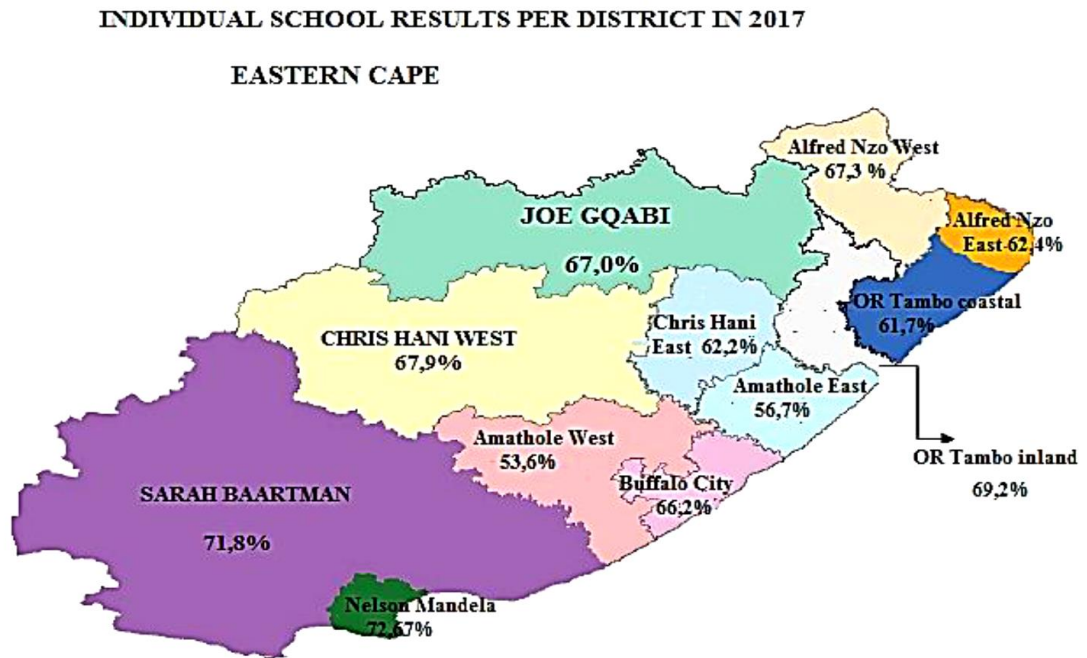
**QUESTION 1**

EC Prep 2018

- 1.1 The cost price of a shirt imported from China was R120 in June 2016 and R125 in June 2017.
- 1.1.1 Define the term *inflation* based on the above context. (2)
- 1.1.2 Write down the difference between the prices in cents. (2)
- 1.1.3 Calculate the selling price of the shirt in 2017 with a 12,5% mark-up. (2)
- 1.2 John bought a pack of 60 eggs at a cost of R90. He sold half of the eggs at a price of R60 and the remaining eggs at a price of R75.
- 1.2.1 Calculate the cost of a dozen eggs. (2)
- 1.2.2 Calculate the total percentage profit made from the sale of 90 eggs. (3)
- 1.3 A bus left Pretoria for Queenstown on Thursday 4/01/2018 at 4:25 pm. It arrived in Queenstown on Friday 5/01/2018 at 3:30 am. Calculate the total time taken for the journey from Pretoria to Queenstown (3)
- 1.4 Determine the number of 275 ml plastic cups that can be filled with Coca-Cola from a 2 litre Coca-Cola bottle. (2)
- 1.5 A scale statement is shown as 100 cm : 75 m.
- 1.5.1 Calculate the actual length of a picture that has a length of 2 cm on the diagram. (3)
- 1.5.2 Write down the above scale as a unit ratio. (3)



1.6 The map below shows the school results per district in the Eastern Cape for the 2017 National Senior Certificate.




Use the map to answer the questions that follow.

- 1.6.1 Identify the best performing district. (2)
- 1.6.2 List the districts that performed poorer than Alfred Nzo East. (2)
- 1.6.3 Determine the district in the middle position from the seven best performing districts according to the results. (2)
- 1.6.4 The 2017 National Senior Certificate results for Mathematical Literacy (2) showed that 73,9% out of 313 030 candidates passed. Determine the number of candidates that failed.

[30]

**QUESTION 1**

FS PREP 2018

<p>1.1 Koos was given a cooler bag for his birthday with the following dimensions:</p> <p>Length = 26 cm Width = 25 cm Height = 40 cm</p> <p>The label on the bag says that it has a capacity of 26 000 ml</p> <p><b>NOTE:</b> 1 000 ml = 1 litres</p>	<p style="text-align: center;"><b>PICTURE OF A COOLER BAG</b></p> <div style="text-align: center;">  </div> <p style="text-align: right; font-size: small;">[Adapted from <a href="http://walmart.com">walmart.com</a>]</p>
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1.1.1 The Volume of the cooler bag above can be calculated by using the formula:  
**Volume = length × width × height**


Identify from A–C the statement that best refers to the volume of the bag:

- A The amount of substance that the bag can hold.
- B The quantity measured in square units that express the extent of a two-dimensional figure of the surface.
- C The space taken by the bag in cubic units. (2)

1.1.2 Convert 26 000 ml to litres. (2)



1.2 The weather predicted for Johannesburg on 17/01/2017 is given below.

**Johannesburg**



17/01/2017  
34<sup>0</sup>C Sunrise 04:31am  
Sunset 06:04pm

Sky is Clear

Rain		Wind		
Symbol	Chance	Symbol	Direction	Speed
	17,0%		N	2 km/h

[Source: [South African Weather](#)]

1.2.1 Write the time 06:04 pm in a 24-hour format. (2)

1.2.2 Identify the probability of rain for Johannesburg on 17/01/2017. (2)

1.3 TABLE 1 below indicates the exchange rate between South Africa (SA) and some other high ranking countries.

**TABLE 1: EXCHANGE RATE BETWEEN SA AND SOME SIX COUNTRIES**

<b>Exchange rate of SA and other Countries</b>		<b>October 02, 2017 09:00</b>
<b>CURRENCY</b>	<b>UNITS PER ZAR</b>	<b>ZAR PER UNIT</b>
US Dollar	0,073482	13,608770
European Euro	0,062562	15,984219
British Pound	0,055187	18,120130
Indian Rupee	4,811223	0,207847
Australian Dollar	0,094072	10,630196
Canadian Dollar	0,091895	10,881951

[Source:

[www.x-rates.com](http://www.x-rates.com)]

Use the information above to answer the questions that follow.

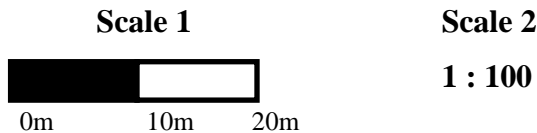
1.3.1 On which date was the exchange rate recorded? (2)

1.3.2 Determine the amount of South African rands (ZAR) that are equivalent to 1US Dollar. (2)

1.3.3 Name the currency used in Australia. (2)

1.3.4 Express 10,881951 as a whole number. (2)

1.4 Katleho went to Mangaung Community Library to study how scales are used in Maps. She discovered that scales can be represented in different formats as below:



Study the two scale formats above and answer the questions that follow.

1.4.1 Give in order the names of the two scales represented above. (2)

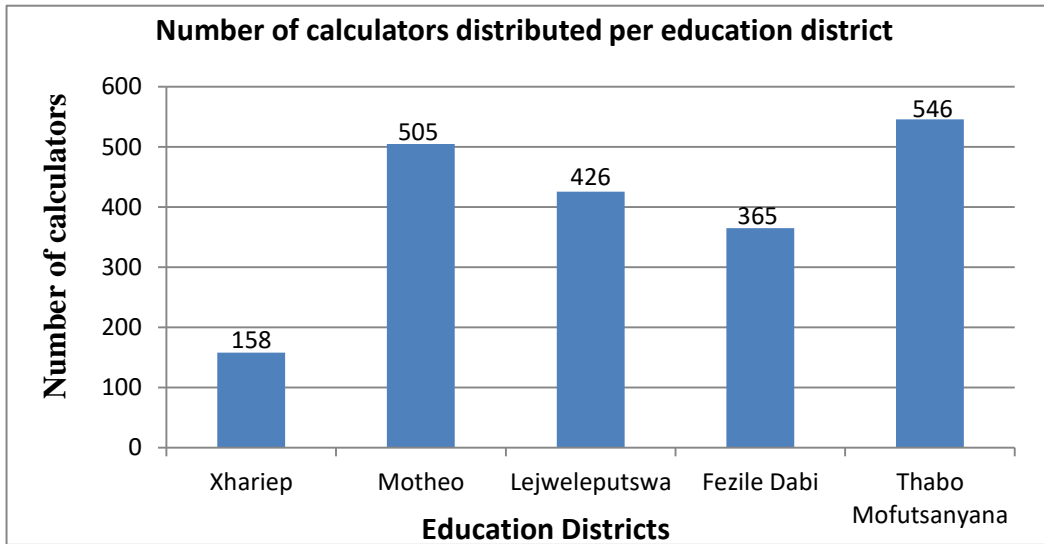
1.4.2 Complete the statement below by choosing the appropriate answer from the given D–F.

To use scale 1 above, you need to ... (2)

- D know that 20 m is equivalent to 100 km.
- E measure how long one segment of the bar is on your ruler.
- F have both types of scales on the map.

1.4.3 Explain the meaning of the scale **1 : 100** (2)

1.5 The Free State Department of Education bought standard function calculators for all its education districts. The distribution of calculators among these districts is represented on the graph below.



**NOTE:** Single standard function calculator costs R59,00.

- 1.5.1 How many education districts received calculators? (2)
- 1.5.2 Determine the total number of calculators bought by the Free State Department of Education. (2)
- 1.5.3 Name the district that was allocated the **SECOND HIGHEST** number of calculators. (2)
- 1.5.4 Explain why the data represented on the graph above is regarded as discrete. (2)
- 1.5.5 Determine the amount of money paid to purchase the standard function calculators for Motheo and Thabo Mofutsanyana. (2)

**[32]**

**QUESTION 1**

1.1

Sipho rents a flat in Ladysmith where he works. He has a car which consumes 5,9 litres per 100 km.  
The bath tub in the bathroom has a capacity of 98 litres. There is a triangular mirror in

Determine:

- 1.1.1 the total length (in cm) of ribbon Sipho should buy to decorate the edges of the mirror. (2)
- 1.1.2 the number of litres to be consumed by the car if Sipho travels a distance of 350 km. (3)
- 1.1.3 the number of litres in the bath tub if it is half full. (2)
- 1.1.4 the capacity of the bath tub in kilolitres if  $1\ 000\ \ell = 1$  kilolitre. (2)


1.2

Mr and Mrs Naidoo have two daughters (Pinky and Ashnee). Pinky and Ashnee plan to buy a gift for their father for Fathers' Day. Mrs Naidoo will prepare a special meal for the day. She paid R454,93 for 7 kg of lamb. Amongst the groceries, there were

- 1.2.1 Determine the cost per kilogram of lamb. (2)
- 1.2.2 Calculate the total cost for a dozen mangoes. (3)
- 1.2.3 Mrs Naidoo divides R900,00 between Pinky and Ashnee in the ratio of 3:2. If Pinky receives R540,00, how much will Ashnee receive? (2)
- 1.2.4 Pinky bought a shirt which cost R533,00 (including 15% VAT) for her father. Calculate the VAT exclusive price of the shirt. (2)

1.3

Wendy wants to build a house. The plan of the house has a scale of 1: 250. The type of blocks are shown below



<b>Clay block</b>	<b>Concrete block</b>	<b>Hollow block</b>	<b>Light weight block</b>
-------------------	-----------------------	---------------------	---------------------------

- 1.3.1 Explain what is meant by the scale on the plan. (2)
- 1.3.2 What is the probability (as a common fraction) of randomly choosing a clay block?

Choose the correct answer from the answers given below:

A)  $P(\text{clay block}) = \frac{2}{4}$     B)  $P(\text{clay block}) = \frac{1}{4}$     C)  $P(\text{clay block}) = \frac{3}{4}$     (2)

1.4

An educator teaches two classes, 29 learners in class A and 20 learners in class B who wrote a test out of 50 marks. The tables below show marks scored by learners.

<b>CLASS A</b>	18	18	19	20	20	22	24	24	26	27	27	27	28	28	29
	30	31	32	33	35	35	36	37	37	38	38	39	40	46	

<b>CLASS B</b>	10	14	14	17	17	18	19	20	22	23
	23	24	25	28	36	38	41	41	42	44

Determine:

- 1.4.1 The minimum mark scored by a learner in class B. (2)
- 1.4.2 The modal mark in class A. (2)
- 1.4.3 The median mark in class A (2)
- 1.4.4 The maximum mark in class A. (2)

**[30]**

**QUESTION 1**

MP PREP 2018

1.1 Sally Williams is an employee of Early Morning Bakery. Below is one of Sally’s salary slips.

<b>EARLY MORNING BAKERY</b>		
		<b>Pay date:</b> 28 February 2018
<b>Employee Name:</b> Sally Williams	<b>Occupation:</b> Specialist baker	<b>ID No:</b> 9110020198085
<b>Address:</b> Sonheuwel Crescent Nelspruit	<b>Bank Account No:</b> 1862149972	<b>Tax No:</b> ZA 628314

<b>Incomes</b>	<b>Amount</b>	<b>Deductions</b>	<b>Amount</b>
Basic salary	R12 550,00	Income Tax	R1 349,55
Overtime	R1 260,00	Medical Aid	R1 150,00
		Pension	R850,00
		UIF	R125,50
<b>Gross Income</b>	<b>R13 810,00</b>	<b>Total Deductions</b>	<b>R3 475,05</b>
		<b>Nett Pay</b>	<b>R10 334,95</b>

Study the payslip above and answer the questions that follow.

- 1.1.1 What is Sally’s occupation? (2)
- 1.1.2 Show how the Total Deduction value of R3 475,05 was calculated. (2)
- 1.1.3 Define the term *Gross Income*. (2)
- 1.1.4 Sally worked 10 hours’ overtime in February. How much money did Sally earn per hour for overtime? (2)

1.2 Barbara makes spring hampers to sell at the Spring Day Fair. She fills old can tins and decorates them. The hampers contain the following items:

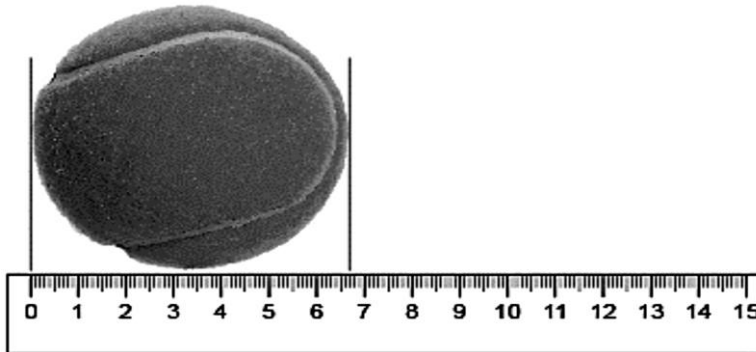
<b>ITEM</b>	<b>UNIT COST PRICE</b>
Gardening gloves	R39,50
Gardening hand toolset	R89,50
Packet of seeds	R12,00
Hand towel	R28,50
Pot with herb seedlings	R15,50



- 1.2.1 Determine the total cost price of the hamper. (3)

1.2.2 She sells 43 of these Spring hampers and receives a total income of R12040.  
Determine the selling price of each hamper. (2)

1.3 Tennis balls have a spherical shape.



The diameter of a tennis ball can be measured with a ruler.

Determine the radius of the tennis ball in millimetres. (3)

1.4 Carnivores are animals feeding on other animals. The Top 10 heaviest land carnivores are listed in the table below. Study the table and answer the questions that follow:

**TABLE 1: Top 10 heaviest land carnivores**

ANIMAL	AVERAGE WEIGHT in kg
Green anaconda	97,5
African lion	250
Polar bear	700
Grey wolf	80
Burmese python	183
Siberian tiger	318
Brown bear	680
Walrus	1 200
Spotted hyena	90
Jaguar	158

1.4.1 Which animal is the third heaviest land carnivore? (2)

1.4.2 Sort the average weight of these land carnivores in descending order. (2)

1.5 LEGO is one of the oldest toys and is still played with all over the world.  
You can combine six of the eight-studded Lego bricks in 915 103 765 ways.

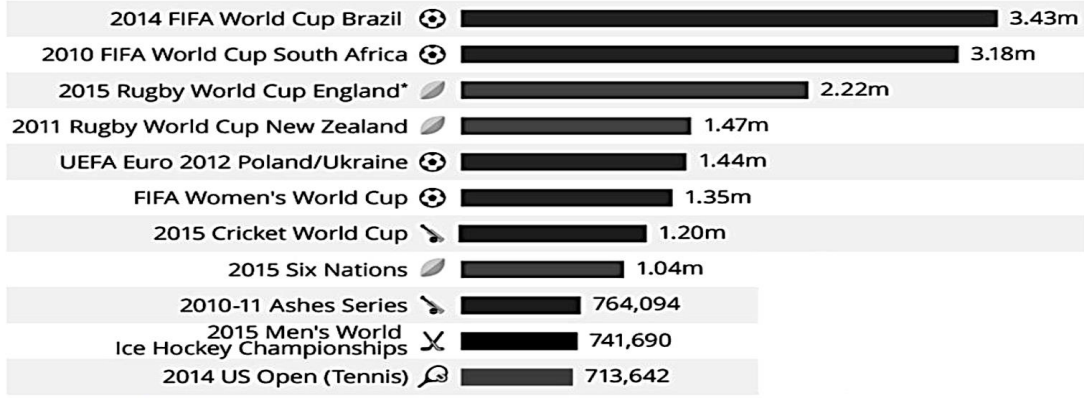


Write out 915 103 765 in words. (2)



1.6 Professional rugby is continuing to grow in popularity around the globe. The Rugby World Cup has become the best attended single sporting event worldwide after the FIFA World Cup.

**FIGURE 1: Attendance at selected major single sports events.**



KEY: m = million



\*Projected attendance  
Source: Sporting events



Study the figure above and answer the questions that follow:

1.6.1 Which sporting event represents the median of the set of data? (2)

1.6.2 Write out the attendance of the 2010 FIFA World Cup South Africa in numerical order. (2)

1.7 Die-cast cars are toys and collectable models that represent real cars in smaller sizes. Die-cast cars come in different sizes. The picture below is a die-cast car with a scale of 1:64 of a 1963 Corvette Stingray Convertible.



1.7.1 Measure the length of the car in centimetre. (2)

1.7.2 Explain the meaning of the scale of the picture. (2)

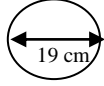

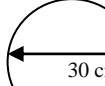
[30]

**QUESTION 1**

NC PREP 2018

1.1

Bobby wants to buy a pizza and studies the following part of a menu of a pizza place.

MEAT	Small	Standard	Large
<i>Free delivery within a <math>\pm 5</math> km radius (All prices include VAT)</i>			
CLUB Ham, bacon, chicken	R39,90	R69,90	R105,90
SOMETHING MEATY Ham, salami, bacon, mince	R39,90	R69,90	R104,90
MEXICAN Mince, Jalapeno, Green pepper, Onions	R36,90	R64,90	R89,90
HAWAIIAN Ham, pineapple	R31,90	R59,90	R79,90

[Adopted from: [www.debonairpizza.co.za](http://www.debonairpizza.co.za)]

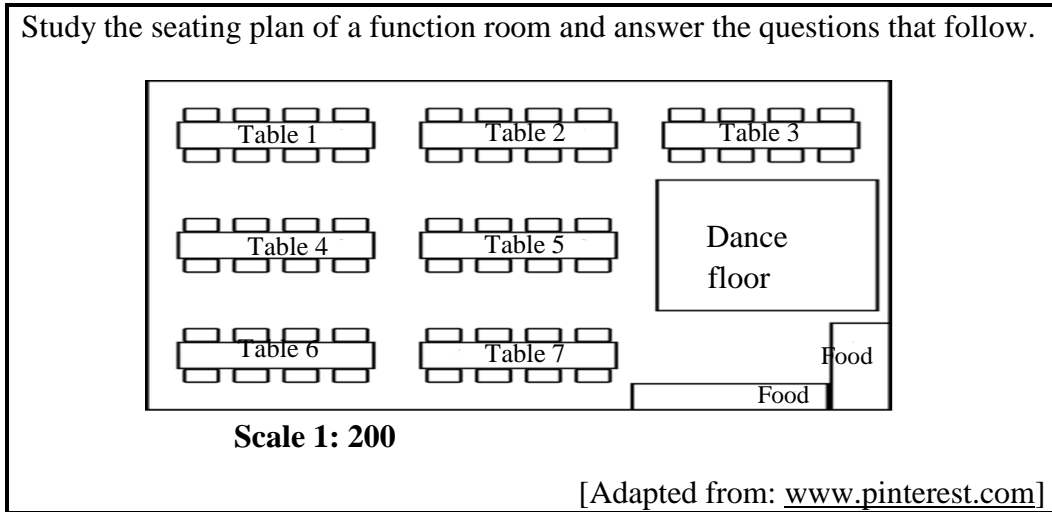
- 1.1.1 Bobby orders TWO large Hawaiian pizzas. What will the total cost be? (2)
- 1.1.2 Does Bobby qualify for free delivery if he lives 3,6 km from the pizza place? (2)
- 1.1.3 He orders the pizzas at 18:03 and receives the delivery at 19:25. How long did he wait for the pizzas? (2)
- 1.1.4 The total area of the large pizza is 707 cm<sup>2</sup>. The area of one slice is 88,38 cm<sup>2</sup>. How many slices of pizza will there be in ONE large pizza? (2)

1.2 A part of a salary advice of a teacher for March 2018 is shown below. Study the salary advice and answer the questions that follow.

Northern Cape Department of Education				
TAX NUMBER	PAY DATE	GROSS SALARY	DEDUCTION	NETT SALARY
6879854	20180328	23 299,75	7401,92	A
INCOME			DEDUCTIONS	
Description	Amount		Description	Amount
Basic salary	23 299,75		Tax	3 631,98
			GEPF	1 747,48
			GEMS	1 883,00
			SACE	35,00
			SAOU	95,71
			ELRC	8,75

- 1.2.1 Explain the difference between *employer* and *employee*. (2)
- 1.2.2 Who is this teacher's employer? (2)
- 1.2.3 Determine the value of A. (2)
- 1.2.4 Calculate the teacher's annual gross salary. (2)

1.3 Study the seating plan of a function room and answer the questions that follow.



- 1.3.1 How many people can attend the function if table 1 to 6 is 100% occupied and table 7 only 50%? (3)
- 1.3.2 Explain what the scale of the diagram means. (2)
- 1.3.3 Measure the length of the dance floor in mm. (2)

1.4 TABLE 1 below shows the number of medals (gold, silver and bronze) that six countries won for three sporting events at the 2018 Commonwealth games in Australia.

**TABLE 1: MEDALS WON BY SIX COUNTRIES FOR THREE SPORTING EVENTS AT 2018 COMMONWEALTH GAMES IN AUSTRALIA**

	Athletics			Swimming			Gymnastics		
	Medals			Medals			Medals		
	Gold	Silver	Bronze	Gold	Silver	Bronze	Gold	Silver	Bronze
England	5	5	7	9	10	5	6	7	3
India	1	1	1	0	0	0	0	0	0
South Africa	5	4	5	6	3	3	0	0	0
Canada	3	6	4	3	11	6	4	6	3
Australia	13	13	10	28	21	24	2	2	5
New Zealand	2	4	0	2	0	1	0	0	0

[Adapted from : [www.bbc.com](http://www.bbc.com)]

Use TABLE 1 and answer the questions that follow.

1.4.1 Which countries did not receive any medals for gymnastics? (2)

1.4.2 Which country received the most silver medals for all three sports and how many did they receive? (3)

1.4.3 Is this data discrete or continuous? (2)

**[30]**

**QUESTION 1**

WC PREP 2018

1.1 Lebogang is a 37-year-old salesman at a pharmaceutical company who earns a gross monthly salary of R13 200. Each employee must contribute 1% of the gross monthly salary towards UIF.

1.1.1 Determine Lebogang’s annual gross salary. (2)

1.1.2 Determine Lebogang's monthly contribution to UIF. (2)

1.2 Quinton is a 66-year-old grandfather and his annual taxable income is R255 180. Use the SARS tax table below to answer the questions that follow:

<b>ANNUAL RATES FOR INDIVIDUALS</b>		
<b>2016/ 2017 Tax year (1 March 2016 – 28 February 2017)</b>		
<b>Tax category</b>	<b>Taxable Income (R)</b>	<b>Rates of Tax (R)</b>
1	0 – 188 000	18% of taxable income
2	188 001–293 600	33 840 + 26% of taxable income above 188 000
3	293 601–406 400	61 296 + 31% of taxable income above 293 600
4	406 401–550 100	96 264 + 36% of taxable income above 406 400
5	550 101–701 300	147 996 + 39% of taxable income above 550 100
6	701 301 and more	206 964 + 41% of taxable income above 701 300

**Tax Rebates**

<b>Tax Rebate</b>	
Primary	R13 500
Secondary (65 and older)	R7 407
Tertiary (75 and older)	R2 466

1.2.1 Indicate in which tax category Quinton falls. (2)

1.2.2 Calculate the rebate amount Quinton qualifies for. (2)

- 1.3 An advertisement on a website showing second hand farm equipment, lists the following details of a tractor for sale:

**2009 JOHN DEERE 7810**

€44 000 excluding VAT

€53 680 including VAT

(R624 360 excluding VAT)

Total number of hours of work: 4 500

(January 2018)



- 1.3.1 Write down the date on which this advertisement was placed. (2)

- 1.3.2 If the tractor was bought in January 2009, determine how many years it was used until the date of this advertisement. (2)

- 1.3.3 The advertisement mentions that the tractor has worked for 4 500 hours. Determine the average number of hours the tractor worked per year. (2)

- 1.4 Plastic surgery is a growing industry. A survey of 20 000 people took place in South America in 2016 and the following information is provided in an article on statista.com:

*"Eight out of every 1 000 Venezuelans have undergone some form of plastic surgery by 2016, which pushes them up to the top of plastic surgery teams."*

- 1.4.1 Complete the following statement:  
 "One out of every ... people undergo plastic surgery procedures in Venezuela."  
 Write down the answer and not the whole sentence. (2)

- 1.4.2 Calculate the number of Venezuelans who participated in the survey and had plastic surgery in 2016. (2)

1.5 The distance between cities in South Africa is shown in TABLE 1 below. Use the table to answer the following questions.

**TABLE 1: DISTANCES IN KM BETWEEN THE CITIES IN SOUTH AFRICA**

	Bloemfontein	Cape Town	Johannesburg	Mafikeng	Port Elizabeth	Pretoria
Bloemfontein	–	1004	398	464	681	455
Cape Town	1 004	–	1 402	1 343	769	1 460
Johannesburg	398	1 402	–	287	1 075	58
Mafikeng	464	1 343	287	–	1 141	294
Port Elizabeth	681	769	1 075	1 141	–	1 133
Pretoria	455	1 460	58	294	1 133	–

- 1.5.1 Write down the distance between Mafikeng and Port Elizabeth. (2)
- 1.5.2 Which city is 400km closer to Cape Town than Johannesburg? (2)
- 1.5.3 Which TWO cities are closest to each other? (2)

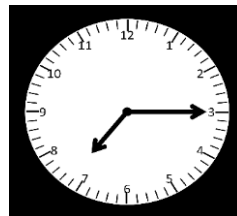
1.6 Sarah bakes gingerbread cookies and uses the following recipe for the cookies.

- Ingredients (makes ±24 cookies)
- $\frac{3}{4}$  cups soft brown sugar
  - 3 cups cake flour
  - 1 teaspoon bicarbonate of soda
  - 2 teaspoons coarsely ground ginger
  - 1 teaspoon nutmeg
  - $\frac{1}{4}$  teaspoon salt
  - 5ml golden syrup
  - $\frac{3}{4}$  cups butter
  - 125ml molasses
  - 1 egg



- 1.6.1 How many cups of cake flour are needed to bake 48 cookies? (2)
- 1.6.2 Ginger cookies are made by using spices such as ginger, nutmeg and salt. Calculate the total number of teaspoons required for these spices in (2)

- 1.6.3 Sarah took the cookies out of the oven at the time indicated on the watch after 18 minutes of baking.  
What time did she put the cookies in the oven?



(2)  
[30]













**QUESTION 1**

NSC Nov 2018

1.1

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

 <p style="text-align: right;">2 ℓ</p> <p style="text-align: center;">Coke, Sprite and Fanta 30% OFF R11 each</p>		 <p style="text-align: center;">Ariel 50% OFF R45 each</p>	
 <p style="text-align: center;">Sunlight 35% OFF R18</p>	 <p style="text-align: center;">Classic 45% OFF R15 each</p>	 <p style="text-align: center;">Liquifruit 40% OFF R22 each</p>	 <p style="text-align: center;">Weetbix Save R20 R44</p>
 <p style="text-align: center;">Jacobs Save R35 R65 each</p>	 <p style="text-align: center;">Airborne Save R25 R30 per pack</p>	 <p style="text-align: center;">hth Save R70 R250</p>	 <p style="text-align: center;">Gaviscon Save R30 R43</p>

[Source: [www.checkers.co.za](http://www.checkers.co.za)]

**NOTE:**

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

Study the advertisement above to answer the questions that follow.

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

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

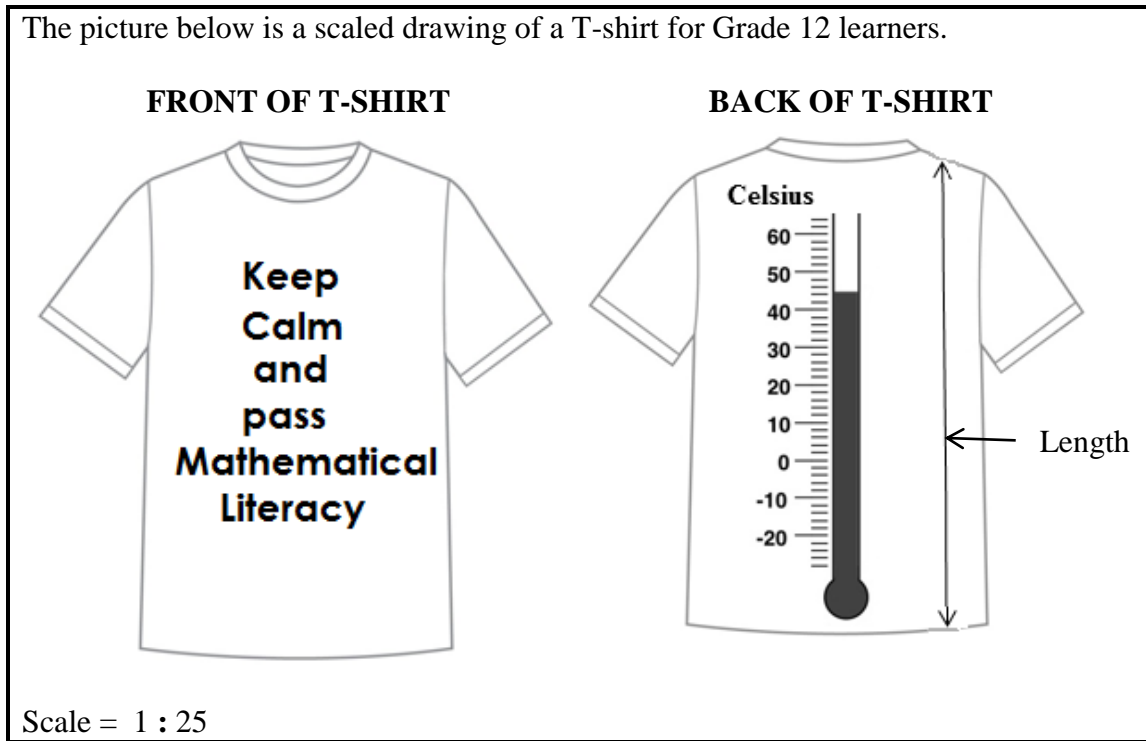
1.1.3 Write down the name of the product which is now half price. (2)

1.1.4 Convert 750 ml to litres. (2)

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

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

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



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

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

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

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

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

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

**TABLE 1: TWO OCEANS MARATHON VS COMRADES MARATHON**

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

[Adapted from [www.capetownmagazine.com](http://www.capetownmagazine.com) and [www.news.comrades.com](http://www.news.comrades.com)]

Use TABLE 1 above to answer the questions that follow.

- 1.3.1 Which race took place first? (2)
- 1.3.2 Which one of the two races had the longest distance? (2)
- 1.3.3 Determine the difference between the entrance fee of the Two Oceans Marathon and the entrance fee of the Comrades Marathon. (2)

1.4

The Comrades Marathon Association (CMA) has issued its medical statistics for the race held on Sunday 4 June 2017.

Start of the race: 05:30

End of the race: 17:30

TABLE 2 shows the medical statistics on race day.

**TABLE 2: MEDICAL STATISTICS**

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

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

Use TABLE 2 above to answer the questions that follow.

- 1.4.1 Write down the maximum time given to the athletes to complete the Comrades Marathon. (2)
- 1.4.2 State if the medical statistics data is discrete or continuous. (2)
- 1.4.3 Write down the ratio of athletes starting the race to the athletes finishing the race. (2)

**[32]**

**QUESTION 1**

FS SEPT 2019

1.1 The annual salaries (in rands) of the top 9 highest paying jobs in South Africa are listed below:

1 684 000 ; 1 592 500 ; 1 552 000 ;

1 440 000 ; 1 440 000 ; 1 404 229 ;

1 380 000 ; 1 300 000 ; 1 300 000 ;

[Source adapted from: [www.buzzsouthafrica.com](http://www.buzzsouthafrica.com)]

Use the information above to answer the questions that follow.



1.1.1 Identify the HIGHEST annual salary earned in South Africa. (2)

1.1.2 Express the amount R1 404 229 in words. (2)

1.1.3 Identify the mode(s) of the above data. (2)

1.1.4 Determine the median salary. (2)

1.2 The prices of two types of blenders are given below. All prices exclude 15% VAT.

<p><b>BLENDER 1</b>                  Normal price: R799                  Discount: R200                  New price: R599                  VAT: R89,85</p> 	<p><b>BLENDER 2</b>                  Normal price: A                  Discount: R41                  New Price: R259                  VAT: 15%</p> 
---	---

Use the information above to answer the questions that follow.

1.2.1 Write down the discount amount for blender 1. (2)

- 1.2.2 Calculate **A**, the normal price for blender 2. (3)
- 1.2.3 Determine the difference between the new price of blender 1 and the new price of blender 2. (3)
- 1.2.4 Show how the VAT amount of R89,85 was calculated. (2)
- 1.3 A recipe for a flu-fighting smoothie to serve 2 people is given below:

**Ingredients**

100g cranberries  
 100g strawberries  
 200g blueberries  
 2 dried apricot  
 2 dried prunes  
 150ml Greek yoghurt  
 150ml full-cream milk  
 2 tsp. *Smart bite* flaxseed oil

*Place all ingredients in a blender and whizz until smooth.*

**NOTE:** tsp. = tea-spoon (5 ml)  
 1 kg = 1 000g



Use the information above to answer the questions that follow.

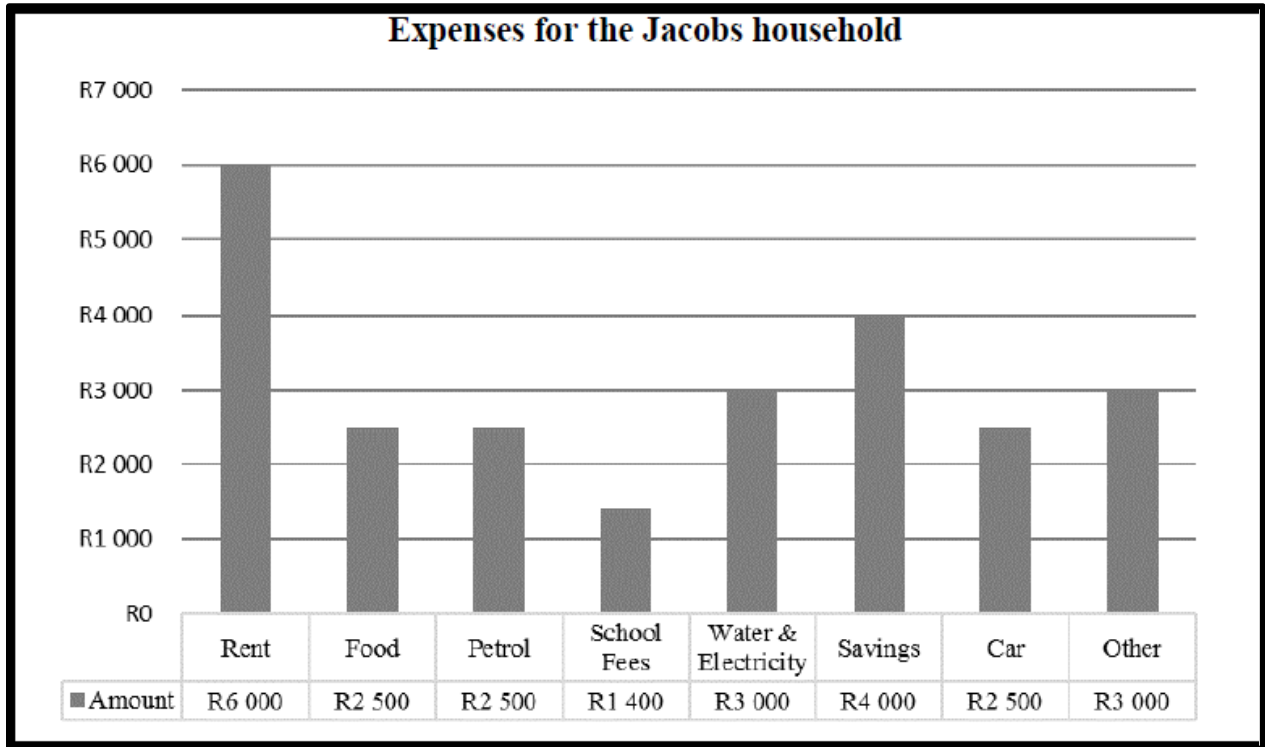
- 1.3.1 Determine the total mass of the berries. (2)
- 1.3.2 Convert the mass of the blueberries into kg. (2)
- 1.3.3 Determine the number of tea spoons of Greek yoghurt needed. (3)
- 1.3.4 Write down the ratio (in simplified form) of the number of people to the mass of full-cream milk used in this recipe. (3)
- 1.3.5 Calculate the number of dried prunes needed to make a flu-fighting smoothie that will be enough for 10 people. (2)

**[30]**

**QUESTION 1**

NW SEP 2019

1.1 The graph below represents the monthly expenses for the Jacobs family household.



Study the graph above and answer the questions that follow.

- 1.1.1 Identify the type of graph used above. (2)
- 1.1.2 Calculate the total amount that the Jacobs household needs to budget for each month. (2)
- 1.1.3 Arrange the amounts of the budgeted items in descending order. (2)
- 1.1.4 Measure the length of the “School Fees” bar in mm. (2)
- 1.1.5 Mrs Jacobs earns a net monthly income of R11 335 and Mr Jacobs earns a net monthly income of R14 363. Determine the total net monthly income of the Jacobs household. (2)
- 1.1.6 Define the term *net income*. (2)

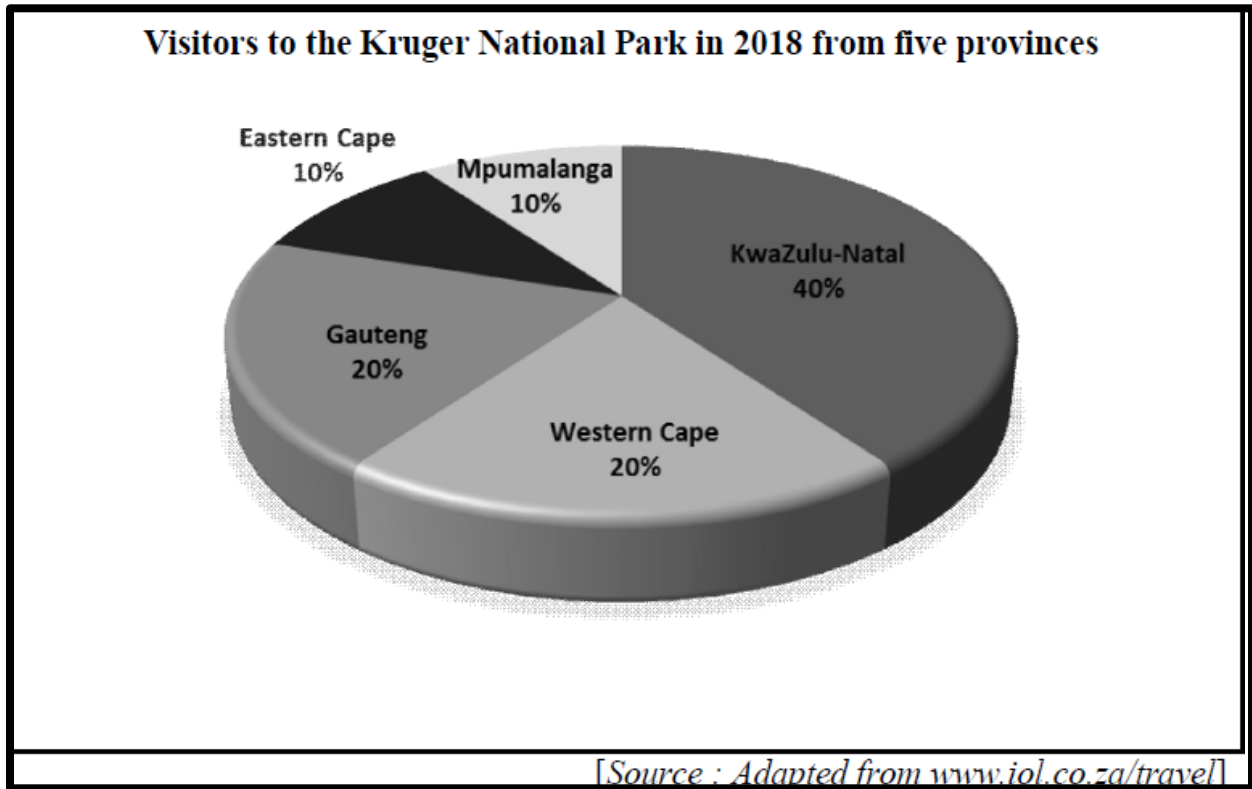
- 1.2 Mr Jacobs wants to buy a new luggage bag for his holiday to the Kruger National Park. He found the two advertisements below while searching the internet.

OCTOLITE CARRY ON	AMERICAN TOURISTER
 <p data-bbox="228 852 391 888"><b>Scale: 1:50</b></p>	 <p data-bbox="834 842 997 877"><b>Scale: 1:75</b></p>
<p data-bbox="228 926 634 999">Selling price: R2 499 (15% VAT included)</p>	<p data-bbox="915 926 1321 999">Selling price: R1 999 (15% VAT excluded)</p>

Study the two options above and answer the questions that follow.

- 1.2.1 Write out the acronym *VAT* in full. (2)
- 1.2.2 Calculate the total VAT charged on the American tourister. (2)
- 1.2.3 Explain the meaning of the scale for the Octolite Carry On. (2)
- 1.2.4 Determine the number of wheels on the American Tourister. (2)
- 1.2.5 Define *selling price* in the above context. (2)

- 1.3 The pie chart below indicates the percentages of people who visited the Kruger National Park from five different South African Provinces. In 2018, the Kruger National Park was visited by 1 653 793 people, from these five different provinces.



Study the pie chart and information above and answer the questions that follow.

- 1.3.1 Write down the total number of visitors to the Kruger National Park for 2018 in words. (2)
- 1.3.2 Identify the province with the highest number of visitors to the Kruger National Park in 2018. (2)
- 1.3.3 Calculate the total number of visitors from KwaZulu-Natal to the Kruger National Park in 2018. (2)
- 1.3.4 Write as a ratio, the percentage of visitors from the Western Cape to the percentage of visitors from the Eastern Cape, in the simplest form. (2)
- 1.3.5 Determine the probability of randomly selecting a visitor to the Kruger National Park, from the data provided above, who comes from the Free State. (2)

[32]



**QUESTION 1**

KWAZULU NATAL 2019

- 1.1 Zipho bought 50 stick sweets in a packet. The cost price of one packet is R38,00. He sells each stick sweet at R1,10.

Use the information above to answer the questions that follow.

1.1.1 Calculate the cost price of one stick sweet (2)

1.1.2 Calculate the profit from one stick sweet. (2)

1.1.3 Calculate the price of a dozen packets of stick sweets from the shop. (2)

- 1.2 The caterer mixes juice in a 20 litre bucket. Each glass holds 200 ml of juice. Juice was served to the guests attending the party. Juice was finished from the bucket. Each person drank one glass of juice.

**Note: 1 litre = 1 000 millilitres**

Use the information above to answer the questions that follow.

1.2.1 Convert 20 litres to millilitres. (2)

1.2.2 Write the capacity of the glass to the capacity of a 20 litre bucket as ratio in simplified form. (3)

1.2.3 Determine the number of people who attended the party if they all drank juice. (2)

- 1.3 The disc jockey (DJ) brought CDs of various genre to play at the party. The number of CDs per genre are as follows:

- 5 R & B
- 10 House
- 3 Hip hop
- 7 Maskandi
- 3 Kwaito

Use the information above to answer the questions that follow.

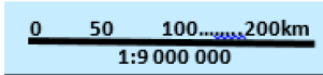
1.3.1 Determine the number of CDs brought to the party. (2)

1.3.2 Define the term *outcome* as it is used in probability. (2)

1.3.3 What is the percentage chance that a jazz music CD can be picked from DJ's collection? (2)

1.4 There are two types of showing a scale on a map and both are shown below.

**TWO SCALE FORMATS:**



Use the information above to answer the questions that follow.

1.4.1 Name the two types of scales shown above. (2)

1.4.2 Explain what the scale 1:9 000 000 means. (2)

1.5 On TABLE 1 below are soccer teams standings according to ABSA premiership soccer league.

Team Position	Matches played	Win	Draw	Lose	Goals	Points
1. Bidvest Wits	21	11	5	5	12	38
2. Orlando Pirates	21	9	9	3	11	36
3. Mamelodi Sundowns	19	9	9	1	11	36
4. Cape Town city	20	9	6	5	8	33
5. Supersports	21	9	5	7	2	32
6. Kaizer Chiefs	21	7	8	6	5	29
7. Bloemfontein Celtic	21	8	5	8	1	29
8. Polokwane City	20	7	8	5	1	29
9. Highlands park	21	5	11	5	1	26
10. Golden Arrows	21	5	10	6	-1	26
11. Amazulu FC	21	8	5	8	-4	23
12. Baroka FC	21	4	9	8	-5	21
13. Black Leopards	20	5	6	9	-10	21
14. Chippa United	21	4	8	9	-6	20
15. Free State Stars	20	5	4	11	-15	19
16. Maritzburg United	21	2	8	11	-11	14

Source: www.psl.co.za

Use the table above to answer the questions that follow.

1.5.1 Identify the team that has the highest number of points. (2)

1.5.2 Give the modal number of points. (2)

1.5.3 Determine the total number of matches played by all ABSA premiership league teams. (2)

1.5.4 Identify the minimum and the maximum values of points accumulated on the league. (2)

1.5.5 Name the team that has less matches played. (2)

[33]

**QUESTION 1**

EC SEP 2019

1.1 Jane’s bank balance at the end of January 2019 was -R2 530. The employer deposited her net salary on 01/2/2019 into her bank account and the new balance was R8 750.

1.1.1 Calculate the net salary amount that was deposited into Jane’s bank account. (2)

1.1.2 Calculate Jane’s gross salary if her gross salary is 175% of the new balance. (2)

1.2

On the 9<sup>th</sup> of February 2019 at 14:35, Jane withdrew R500 for shopping. Her bank charges R2 + 0, 75% of the amount withdrawn above R500. She arrived at home at 16:21 after shopping.

1.2.1 Calculate the bank charges for withdrawing the R500. (2)

1.2.2 Jane bought a dress that was advertised as shown in the picture below.

**DRESS FOR SALE!!!**



**Old Price: R300**  
**Discount: 20%**

1.2.2 Calculate the price Jane paid for the dress after the discount. (2)

1.2.3 Determine the elapsed time from the time she withdrew the money to the time she arrived home. (2)

- 1.3 ANNEXURE A shows a picture of an 800 g loaf of brown bread, its ingredients and nutritional values.

Use ANNEXURE A to answer the questions that follow.

- 1.3.1 Determine the number of slices in the 800 g bread if they were sliced equally. (2)
- 1.3.2 Determine the mass of the sugar in a loaf of brown bread. (2)
- 1.3.3 Calculate the number of joules (J) in 1 003,90 (kJ). (2)
- 1.3.4 Calculate the cost of two slices of bread in a sandwich if the loaf is priced at R14,99. (2)

- 1.4 A scale of 1 : 500 000 was used on a map of South Africa.

Use the above information to answer the questions that follow.

- 1.4.1 Name the type of scale used on the map. (2)
- 1.4.2 Determine the actual distance on the ground in kilometre (km) represented by the 500 000 cm. (2)

- 1.5 TABLE 1 below shows the percentage pass (% Pass) of learners in Eastern Cape Districts in 2018 NSC Results (Grade 12) in Mathematical Literacy.

**TABLE 1: PERCENTAGE PASS OF LEARNERS IN EASTERN CAPE DISTRICTS IN 2018 NSC RESULTS (GR 12) IN MATHEMATICAL LITERACY**

Name of District	No. of learners who wrote	% Pass
Alfred Nzo East	1 314	61,0
Alfred Nzo West	2 226	61,5
Amathole East	2 247	53,3
Amathole West	2 605	50,2
Buffalo City	4 438	72,1
Chris Hani East	976	56,0
Chris Hani West	2 729	64,5
Joe Gqabi	1 436	61,7
Nelson Mandela Metro	5 227	75,8
OR Tambo Coastal	2 747	61,1
OR Tambo Inland	2 146	69,2
Sarah Baartman	1 940	70,6
<b>TOTAL</b>	<b>30 031</b>	<b>64,4</b>

[Source: [ecdoe.co.za](http://ecdoe.co.za)]

- 1.5.1 Name the district with the highest percentage pass. (2)
- 1.5.2 Arrange the pass percentage of the districts in ascending order. (2)
- 1.5.3 Name the districts that obtained a better percentage pass than Chris Hani West. (2)
- 1.5.4 Calculate the percentage of learners that failed in OR Tambo Inland. (2)
- 1.5.5 For the 2018 Eastern Cape results, write down the probability of a randomly selected learner who passed Mathematical Literacy. (2)

[32]

**ANNEXURE A: QUESTION 1.3****PICTURE OF 800 g BROWN BREAD**

kJ – kilojoule

1 kJ=1000 J

kcal – kilocalorie

1 kcal =1 000 calories

**NUTRITIONAL VALUES FOR BROWN BREAD****NET CONTENTS IN 800 g**

<b>Typical Values</b>	<b>(Per 100 g) Two slices(100g)</b>	<b>One slice (50 g)</b>
Energy	1 003,90 kJ = 237,60 kcal	501,95 K = 118,80 kcal
Fat	2,0 g	1,0 g
Saturates	0,36 g	0,18 g
Carbohydrates	41,30 g	20,65 g
Sugar	3,20 g	1,6 g
Fibre	6,80 g	3,4 g
Protein	10,20 g	5,1 g
Salt	1,0 g	0,5 g

[Adapted from *a loaf of bread plastic*]

**QUESTION 1**

DBE JUNE 2019

1.1 ANNEXURE A shows a revolving credit loan taken out from Woolworths Financial Services.

**NOTE:** A revolving credit plan is a loan where a person can re-use all or part of the money that has been paid back towards the loan without applying for it again.

Use ANNEXURE A to answer the questions that follow.

1.1.1 Identify the borrower of the revolving credit loan. (2)

1.1.2 Write down the loan amount available on this statement. (2)


1.1.3 Write down the number of statements the borrower will receive in ONE year. (2)

1.1.4 Explain the term debit order. (2)

1.1.5 Calculate the number of days from the statement date to the payment due date. (2)

1.1.6 Calculate the closing balance (A) of the loan taken on 29/04/2016. (2)










**ANNEXURE A**

<b>WOOLWORTHS FINANCIAL SERVICES</b> 				
<b>SUSAN VISSER</b> <b>PO BOX 271</b> <b>KIMBERLEY</b> <b>8300</b>		<b>STATEMENT DATE</b>	<b>14 Jan 2017</b>	
		<b>PAYMENT DUE DATE</b>	<b>8 Feb 2017</b>	
		<b>ACCOUNT NUMBER</b>	<b>6007 585 **** *</b>	
		<b>INSTALMENT FREQUENCY</b>	<b>Monthly</b>	
<b>LOAN STATEMENT</b>				
<b>TRANSACTION DETAILS</b>				
<b>DATE</b>	<b>STORE</b>	<b>DESCRIPTION</b>		<b>AMOUNT</b>
30 Dec 2016	Head Office	Debit order payment		443,27 CR
14 Jan 2017	Head Office	Monthly account fee		38,00
14 Jan 2017	Head Office	Total interest		221,82
		Fees and insurance		
		Opening balance	35,00	
		Payment	35,00-	
		Closing balance	38,00	
		Loan taken on 09/10/2015 over 36 months		
		Opening balance	2 658,20	
		Interest charged	55,05	
		Payments	153,46-	
		Closing balance	2 559,79	
		Loan taken on 29/04/2016 over 60 months		
		Opening balance	6 859,99	
		Interest charged	144,04	
		Payments	221,89 -	
		Closing balance	<b>A</b>	
		Loan taken on 10/10/2016 over 60 months		
		Opening balance	1081,89	
		Interest charged	22,73	
		Payments	32,92-	
		Closing balance	1071,70	
		Outstanding loan balance		10451,63
		Loan amount available		548,37
		Next instalment due		446,27





[Adapted from Woolworths financial document]



1.2

The weather forecast for Cape Town for the period 1 to 9 June 2017 is shown below.						
MON.	TU.	WED.	TH.	FRI.	SAT.	SUN.
			1	2	3	4
						
			19 °C	26 °C	22 °C	21 °C
			9 °C	7 °C	11 °C	6 °C
5	6	7	8	9		
						
20 °C	14 °C	15 °C	15 °C	16 °C		
9 °C	9 °C	7 °C	3 °C	8 °C		

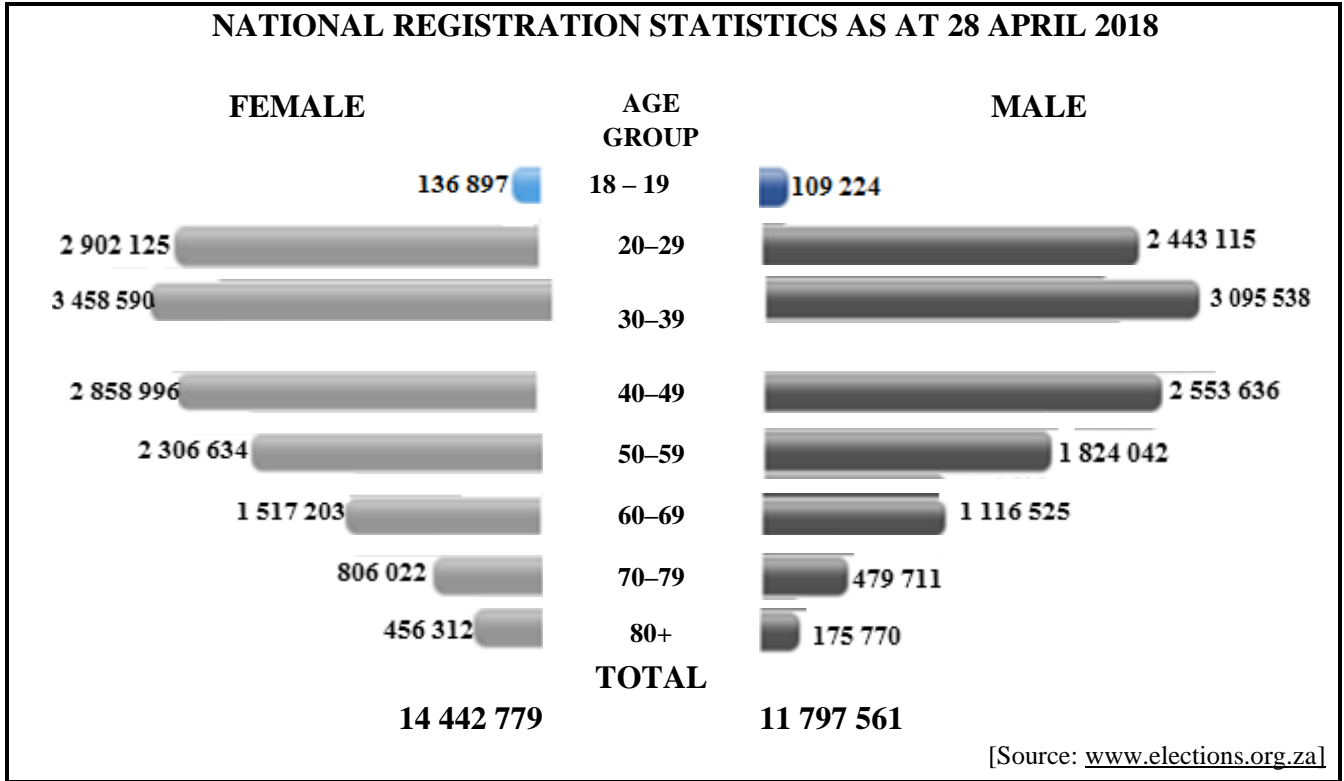
KEY	
	Sunny
	Cloudy
	Rain
	Rain and Lightning
35 °C	Max. temp.
7 °C	Min. temp.

[Source: [www.wunderground.com](http://www.wunderground.com)]

- 1.2.1 Identify the maximum temperature for Friday 2 June 2017. (2)
- 1.2.2 Write down the full date on which the lowest minimum temperature was measured. (2)
- 1.2.3 Arrange the maximum temperatures in descending order. (2)
- 1.2.4 Determine the date when there was rain and lightning. (2)
- 1.2.5 Determine the difference between the maximum and minimum temperatures on Thursday 8 June 2017. (2)

1.3

The comparative bar graph shows the national registration statistics of the population of South Africa for both male and female as at 28 April 2018.



Study the graph above and answer the questions that follow.

- 1.3.1 Write down the age group in which the second highest number of female voters have registered. (2)
  
  - 1.3.2 Calculate the number of male voters under the age of 40 years. (2)
  
  - 1.3.3 Write down, in words, the number of female voters in the 40-49 age group. (2)
  
  - 1.3.4 State whether the data in the graph is discrete or continuous. (2)
  
  - 1.3.5 Calculate the difference between the total number of male and female voters. (2)
- [32]**

**QUESTION 1**

DBE NOV 2019

1.1

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

**TABLE 1: SOCIAL GRANTS FOR 2019 – 2020**

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

[ Adapted from [www.treasury.gov.za/Rapport](http://www.treasury.gov.za/Rapport)]

Use TABLE 1 above to answer the questions that follow.

- 1.1.1 Is the type of data in TABLE 1 numerical data or categorical data? (2)
- 1.1.2 Identify the modal allowance amount for March 2020. (2)
- 1.1.3 Arrange the social grants for March 2019 in descending order of value. (2)
- 1.1.4 Determine (in rand) the increase in the disability allowances for March 2020. (2)
- 1.1.5 Write down the type(s) of allowances which represents the highest amount in March 2020. (2)

1.2

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

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

[Adapted from [www.latestspecials.co.za](http://www.latestspecials.co.za)]

[Adapted from [www.latestspecials.co.za](http://www.latestspecials.co.za)]

- 1.2.1 Convert 400 g to kg. (2)
- 1.2.2 Determine the profit she will make if she sells a can of Hot and Spicy Chakalaka. (2)
- 1.2.3 She buys a 2,5 kg pack of white sugar and repacks the sugar into 250 g packets.  
Determine how many packets she will be able to get from ONE pack of 2,5 kg sugar. (3)
- 1.2.4 The 2 kg Tastic rice is divided into 8 smaller packets. Calculate the selling price of ONE small packet. (2)

1.3

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



[Adapted from NSC 2018 School Subject Report]











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

- 1.3.1 Write down the percentage that represent the following:
- The median (2)
  - Quartile 3 (2)
- 1.3.2 Determine the difference between the highest and the lowest pass percentage. (2)

1.4

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

**HOURLY WEATHER FORECAST FOR KIMBERLEY – 12/03/2019**

13:00	14:00	15:00	16:00	17:00
				
29°C	29°C	29°C	28°C	26°C
N	NNW	NNW	NNW	NW
 20%	 20%	 20%	 37%	 64%

[Adapted from [www.rainboo.co.za](http://www.rainboo.co.za)]

Use the information above to answer the questions that follow.

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

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

**[30]**

## QUESTION 1

NC JUNE 2019

1.1

Student accounts are generally offered to young adults between the ages 18 and 25 who are studying towards a three year degree or diploma.

TABLE 1 below outlines the basic requirements and bank charges of student accounts at various financial institutions.

**TABLE 1: BASIC REQUIREMENTS AND BANK CHARGES OF STUDENT ACCOUNTS AT VARIOUS FINANCIAL INSTITUTIONS**

<b>Financial Institution</b>	<b>FNB</b>	<b>ABSA</b>	<b>Standard Bank</b>	<b>Nedbank</b>	<b>Investec</b>
<b>Age</b>	18 to 25	18 to 27	16 to 24	16 to 24	Under 25
<b>Monthly fee</b>	R10,00	R26,00	R26,00	Free	Free
<b>Withdrawal</b>	R1,60	Free	R2,00	Amounts below R3 000 free R1,00 per R100 more than R3 000	1,2% of value
<b>Deposit</b>	Amount below R3 000 free R0,95 per R100 more than R3 000	Free	R18,00	Free	Free
<b>Debit orders</b>	Free	Free	R4,50	Free	Free
<b>Statement</b>	Free	Free	Free	Free	Free
<b>Prepaid purchases</b>	Free	R1,50	R1,20	R1,00	Free

[Adapted from <https://www.businessstech.co.za>]

Use TABLE 1 above to answer the questions that follow.

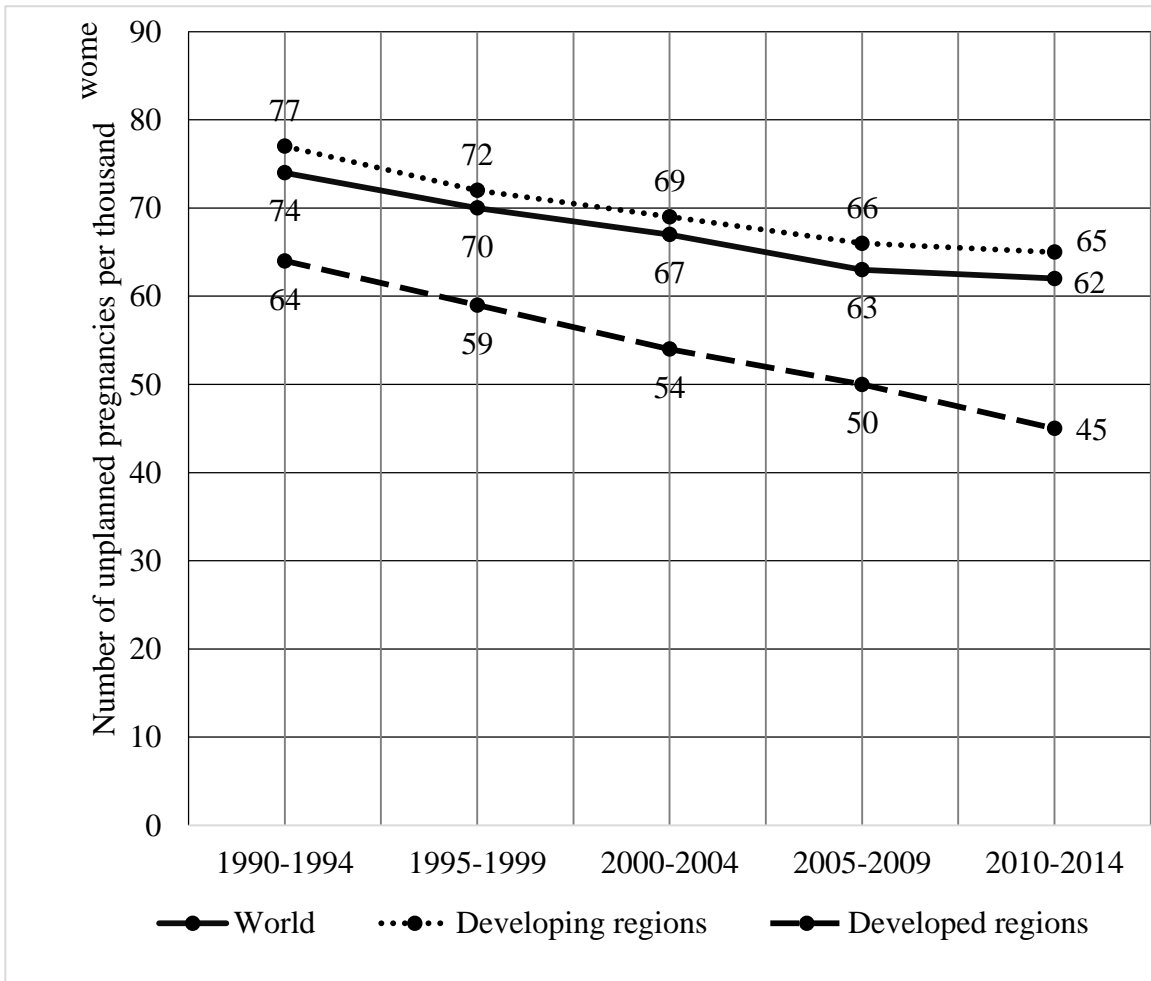
- 1.1.1 Tshepi is 17 years old. At which financial institution(s) would she qualify for a student account? (2)
- 1.1.2 Is the data in the financial institution row in TABLE 1, categorical or numerical data? (2)
- 1.1.3 Which financial institution(s) do(es) not charge a fee for withdrawals? (2)

- 1.1.4 Explain what a *Debit order*. (2)
- 1.1.5 Tshepi will be 18 years old in July 2019. Calculate Tshepi's age (in months) on her 18th birthday. (2)
- 1.1.6 John has a bank account at Investec. Calculate the withdrawal fee, if he withdraws R500,00 from his account. (2)

1.2

The graph below indicates the global number of unplanned pregnancies per 1 000 women (between the ages of 15 and 44) from 1996 to 2014. The data is grouped in five year intervals.

**NUMBER OF GLOBAL UNPLANNED PREGNANCIES FROM 1996 TO 2014 PER 1 000 WOMEN**



[Adapted from [www.gutmacher.org](http://www.gutmacher.org)]

Use the information above to answer the questions that follow.

- 1.2.1 Which region has more unplanned pregnancies per 1 000 women than the World? (2)
- 1.2.2 How many unplanned pregnancies per 1 000 women were there in the World during 2010–2014? (2)
- 1.2.3 Write down the ratio, in simplest form, of the number of unplanned pregnancies of Developing regions during 2005–2009 to the number of unplanned pregnancies in Developed regions during 2005–2009. (2)
- 1.2.4 A four to five week old baby drinks approximately 900millilitres milk daily. Determine how much milk in litre a four to five week old baby drinks daily. (2)

**[20]**



**QUESTION 1**

EC JUNE 2017

- 1.1 Mabo is a director in an import company and earns R1 285 456 p.a.
- 1.1.1 Write down the abbreviation p.a. in full. (2)
- 1.1.2 Write R1 285 456 in words. (2)
- 1.1.3 Round off R1 285 456 to the nearest hundred. (2)
- 1.2 Study TABLE 1 below that shows the items Mabo bought from a Super Spar in Port Elizabeth and answer the questions that follow.  
(Some information is omitted.)

**TABLE 1:** Items Mabo bought

Item		Prices excluding VAT
1:	Marina salt 500 g	R3,99
2:	Maize meal 2,5 kg	R29,99*
3:	I&J fish fingers 400 g	R59,98
4:	Jumbo eggs (1 dozen)	R17,99
5:	150 ml of cooking oil	R13,99
		*0,00% VAT Rate
		14% VAT Rate

- 1.2 1.2.1 Calculate the price of ONE egg. (2)
- 1.2.2 Calculate the amount of VAT to be charged on I&J fish fingers of 400 g. (2)
- 1.2.3 Convert 2,5 kg of maize meal into grams. (1 000 g = 1 kg) (2)
- 1.2.4 Calculate the number of grams for a 150 ml cooking oil if 10 ml weighs 8 g. (2)
- 1.3 Jane mixed orange juice with water in the ratio 1 : 5 to serve to parents at a school function.  
  
Determine the number of glasses of water used to mix 10 glasses of orange juice. (2)
- 1.4 The programme for a 2017 matric farewell function was designed on an A4 sheet of paper with length of 0,294 m. Give this length in centimetres (cm). Given that 1 cm = 0,01 m. (2)

**QUESTION 1**

EC JUNE 2018

- 1.1 Jane has a savings account with ABA Bank. Use the information shown in TABLE 1 below that applies to her account to answer the questions that follow.

**TABLE 1: COSTS OF SAVINGS ACCOUNT AT ABA BANK**

TRANSACTION	COSTS
Deposit	R1.50 + 0.25% of the amount deposited
Withdrawal	R2.00 + 0.5% of the amount withdrawn

- 1.1.1 Calculate the cost she will be charged to deposit R2 000. (2)
- 1.1.2 Write down the minimum cost for any withdrawal transaction. (2)
- 1.2 Jane has a cellphone on a pre-paid arrangement with a network that provides 1 GB (Gigabyte) data at a cost of R149.

**NOTE: 1 GB = 1 000 MB (Megabytes)**

TABLE 2 below shows a list of applications that Jane updated in a month – May 2018.

**TABLE 2: APPLICATIONS UPDATED**

APPLICATIONS UPDATED	DATA PURCHASED ON NETWORK (MB)
Google Drive	23,45
Dropbox	<b>A</b>
Facebook	90
Messages	23
You Tube	45
<b>TOTAL DATA</b>	<b>231,70</b>

Use TABLE 2 above to answer the questions that follow.

- 1.2.1 Determine the value of **A**, the data purchased for updating Dropbox. (2)
- 1.2.2 Calculate the cost of the total data used in updating the above applications. (2)

- 1.3 Study the following boarding pass issued by NICE TRAVEL AIRWAYS and answer the questions that follow.

<b>NICE TRAVEL AIRWAYS</b>			
Passenger: Mr K. Jabulani			
<b>FLIGHT DETAILS</b>		<b>FROM</b>	<b>TO</b>
SA 476	Seat 20B	East London	Johannesburg – O.R. Tambo International Airport
Boarding time	11:35	08 November 2017	
Departure time	12:05		Arrival time 13:30 08 November 2017
Class of Travel: Economy Class		Booking reference: JM74STV	
		TICKET: 82347 1120983 01	
Have a nice flight!			

[Adapted from SAA ticket]

- 1.3.1 Identify Mr Jabulani’s seat number. (2)
- 1.3.2 Calculate the duration (time) for the flight from East London to Johannesburg. (2)
- 1.4 1.4.1 Write down TWO types of scales used on maps. (2)
- 1.4.2 Explain the meaning of scale 1 : 400 000. (2)
- 1.5 In 2017 a report about qualifications indicated that 2 100 000 adults aged 20 years and above attained a tertiary qualification at a South African university. Use TABLE 3 below to answer the questions that follow.

**TABLE 3: ADULTS 20 YEARS AND OLDER, WITH TERTIARY QUALIFICATIONS**

<b>FIELD</b>	<b>NUMBER OF ADULTS</b>
Education	503 096
Business Studies	439 719
Health	221 121
Engineering	219 007
Other fields	-----

- 1.5.1 Determine the number of adults in ‘other fields’. (2)
- 1.5.2 Express the number of adults who obtained a qualification in the field of health as a percentage of the total number of adults. (2)

[20]

**QUESTION 1**

KZN SEPT 2017

Khanyi sells shoes in her shop. She pays R2 500,00 for renting the shop in Pietermaritzburg. The cost price of one pair of shoes is R300, 20. She sells one pair of

- 1.1 Is the rent a fixed or variable expense? (2)
- 1.2 Write down the formula to calculate Khanyi's monthly income from the sale of shoes (2)
- 1.3 In June she sold 17 pairs of shoes.
- 1.3.1 Determine the profit on the sale of one pair of shoes. (2)
- 1.3.2 In July Khanyi sold double the number of pairs of shoes she sold in June. Determine the income she made. (2)
- 1.4 Each pair of shoes is packed in a rectangular box with the following dimensions:

length = 35 cm, width = 16 cm and the height = 8 cm.

- 1.4.1 Which of the following formulae is used to calculate the volume of a rectangular box? Write only the letter of the correct answer.

- A.  $\frac{1}{2} \times \text{base} \times \text{height}$
- B.  $\text{length} \times \text{width} \times \text{height}$
- C.  $\pi \times \text{radius}^2 \times \text{height}$
- D.  $\text{length} \times \text{width}$  (2)

- 1.4.2 (a) The table in Khanyi's shop is circular in shape with a diameter of 1,9 metres. Determine the radius in metres. (2)

**Photo of a table in Khanyi's shop.**



- (b) Hence determine the radius in millimetres. (2)
- 1.5 In July Khanyi ordered 60 pairs of shoes in different colours: 12 red, 5 blue, 30 black and the rest were white.
- 1.5.1 Determine the number of white pairs ordered by Khanyi. (2)
- 1.5.2 Calculate the percentage of pairs of red shoes of the total number of pairs of shoes ordered. (2)
- 1.6 Khanyi stocks perfumes from a wholesale and sells them in her shop. She buys 120 bottles of perfumes at R4 416, 00. The perfumes are packed in dozens.
- 1.6.1 Determine:
- (a) the total number of dozens bought. (2)
- (b) the cost price of each perfume. (2)
- 1.6.2 Khanyi adds 75% mark up on the cost price of the perfume to cover other costs and to make profit. Calculate the income from the sale of all the perfumes. (3)
- 1.7 Thulani assists Khanyi as part time shop assistant only on Saturdays. They work from 09:00 to 13:00. Assume there are four weeks in a month. He earns R35, 00 per hour.
- 1.7.1 Calculate Thulani's monthly pay. (3)
- 1.7.2 On one Saturday, Thulani worked for  $1\frac{1}{2}$  hours. Determine how much he will earn for that Saturday. (2)

**[30]**

**QUESTION 1**

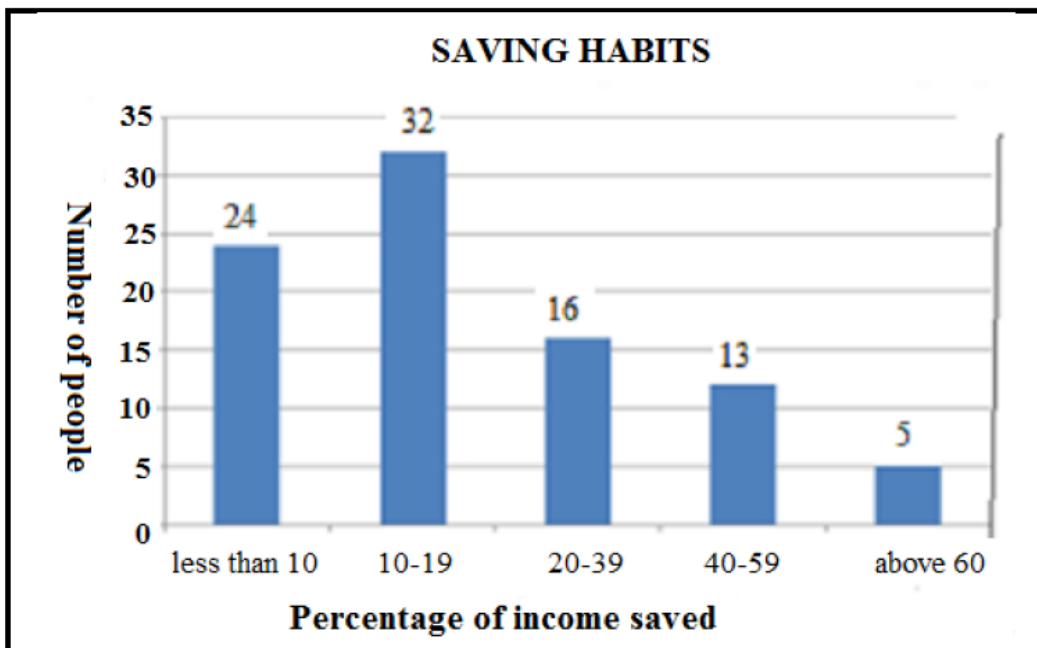
EC SEPT 2016

- 1.1 Ben buys a bicycle on lay-by for R3 200.  
He pays a deposit of R750 and afterwards chose to pay R300 monthly to cover the balance.
- 1.1.1 Express the deposit as a percentage of the purchase price. (2)
- 1.1.2 Determine the balance, after the deposit has been paid. (2)
- 1.1.3 Determine the total amount paid after the deposit and five instalments has been paid. (2)
- 1.2 Karen bought 50 Kwh of electricity from her municipality in June 2017 when the tariff was 0,8865 R/Kwh (Rand per kilo-watt hour), including VAT.
- 1.2.1 Calculate the rate (in cents) for the tariffs charged for the 50 Kwh of electricity. (2)
- 1.2.2 Calculate the total amount charged for the 50 Kwh of electricity. (2)
- 1.2.3 Write the abbreviation VAT out in full. (2)
- 1.3 A care-taker at a school is paid at the rate of R26 per hour worked. He works from 7:30 am for 7 hours, excluding a 15-minute tea break and 45-minute lunch break. He does not work during weekends.
- 1.3.1 Determine the time when he goes off duty. (2)
- 1.3.2 Calculate his income if he worked for four weeks. (2)
- 1.4 The distances between the cities in South Africa are shown in ANNEXURE A. Use it to answer the following questions.
- 1.4.1 Write down the distance between Mafikeng and Port Elizabeth. (2)
- 1.4.2 Name TWO cities that are equal distance from Kimberley. (2)
- 1.4.3 Which two cities are furthest apart? (2)

**DISTANCES IN KM BETWEEN THE CITIES IN SOUTH AFRICA**

	Bloemfontein	Cape Town	Durban	East London	Johannesburg	Kimberley	Mafikeng	Port Elizabeth	Pretoria	Umtata
Bloemfontein	–	1004		584	398	177	464	681	455	570
Cape Town	1 004	–	1 753	1 079	1 402	969	1 343	769	1 460	1 314
Durban	634	1 753	–	674	557	811	821	984	636	439
East London	584	1 079	674	–	982	780	1 048	310	1 040	235
Johannesburg	398	1 402	557	982	–	476	287	1 075	58	869
Kimberley	177	969	811	780	476	–	380	743	530	747
Mafikeng	464	1 343	821	1 048	287	380	–	1 141	294	1 034
Polokwane	706	1 710	886	1 290	297	780	569	1 383	250	1 181
Port Elizabeth	681	769	984	310	1 075	743	1 141	–	1 133	545
Pretoria	455	1 460	636	1 040	58	530	294	1 133	–	928
Umtata	570	1 314	439	235	869	747	1 034	545	928	–

- 1.5 A research was carried out among some parents of Zozo High School to indicate the percentage of their income they saved in June 2017. The results are shown on the graph below.



- 1.5.1 Determine the number of people that took part in the survey. (2)
- 1.5.2 Calculate the number of people who saved less than 20% of their income. (2)
- 1.5.3 What was the modal range? (2)
- 1.5.4 Write down the type of graph used to display the information. (2)

[30]