Western Cape Government
Education

Directorate: Curriculum FET

SUBJECT

REVISION BOOKLET
2020 TERM 2

Grade 12

This revision program is designed to assist you in revising the critical content and skills covered during the 2nd term. The purpose is to prepare you to understand the key concepts and to provide you with an opportunity to establish the required standard and the application of the knowledge necessary to succeed in the NCS examination.

The revision program covers the following topics:

FINANCE

The following concepts need to be understood: Borrower, lender, interest rate, Investments, Principal amount, interest rate, monthly payment, deposit, repayment, loan term (life), investment, term (life), interest, charges, opening and closing balance, debit, credit, stop order, bank charge or transaction fee, debit order, ATM, electronic transfer, payment, interest, credit rates; debit rates, branch, deposit, withdrawal. Inflation is the increase of the price of a typical basket of goods and services calculated over a period of time. Inflation rate is calculated as a percentage.

Question 1 and 2 in the section of Finance are Level 1 and 2 Questions (These questions will be in your first question paper. This type of questions mostly need one line or one step answers)
Finance will cover 35% of your Question Papers in the final examination.
All these finance questions were covered in the first week's lesson.

QUESTION 1

1.1 Roelf and his friend eat at a restaurant and receive the following bill at the end of the evening.

Lekke-eet Restaurant
Kalahari Mall
Upington

Tel: 054-556 7892
13/01/2019 **Waiter: Marco van der Merwe**
21:07

Appletizer	1	28,90
Large Soda	1	23,90
Calamari strips	2	139,80
Chicken Schnitzel Full	1	109,90
Cheese burger	1	79,90
		382,40*
	Tip	.....
	Total	.....
* VAT (15%) included		

1.1.1 What is the name of the waiter who served them? (2)

1.1.2 Determine the price of one portion of Calamari strips. (2)

1.1.3 Roelf and his friend arrived at the restaurant at 18:45. How long did they stay at the restaurant before they received their bill? (2)

1.1.4 Is the waiter's tip included in the bill? (2)

1.2 Jodin wants to take out a personal loan of R35 000. He found the following information. The monthly service fee, which is part of the repayment, is R69,00. The initial fee is R1 207,50 and the interest rate is 27,5%.

TABLE 1: FEE STRUCTURE FOR A PERSONAL LOAN OF R35 000

Repayment period in months	24	36	48	60	72
Monthly repayment in rand	2 173,89	1 683,63	1 447,30	1 312,18	1 227,32

1.2.1 Explain the meaning of *interest rate*. (2)

1.2.2 How much is the monthly service fee? (2)

1.2.3 How much more will Jodin repay per month if he repays the loan in 24 months' time rather than in 48 months' time? (2)

1.2.4 Calculate the number of years it will take Jodin to repay a loan if his monthly installment is R1 312,18 per month (2)

1.3 Jade Abrahams has a current account with the Maitland Bank. Below is the monthly statement she received from her bank at the end of February 2018. Study the bank statement and answer the questions that follow:

BANK STATEMENT

J Abrahams
Baxl Avenue 2
Parow
7460

Maitland Bank
Albert Road 141
Woodstock
7306
28 February 2018

1 February 2018 – 28 February 2018

Current Account
Account number: 938 257 145

Date	Details	Debit	Credit	Balance
1	Opening balance			18 350,25
5	Cash deposit (Branch counter)		2650,00	21 000,25
7	Purchases: Pick & Pay	1 950,00		19 050,25
7	Stop Order: Mutual & Federal	678,20		18 372,05
12	Cash Deposit: ATM		500,00	18 872,05
15	Electronic Fund Transfer: J Nel	3 472,08		**2.3.1**
20	Cash Withdrawal: FNB ATM	750,00		14 649,97
28	Interest on credit balance		15,72	14 665,69

1.3.1 What was the balance in her account on 15 February? (2)

1.3.2 Use the extract of the bank charges of Maitland Bank:

- Cash deposit, inside branch over the counter: R8,07 + R2.02 per R100 or part of it.
- Cash deposit, ATM: R4,54 + R1,41 per R100 or part of it.
- Cash withdrawal, own ATM: R6,05
- Cash withdrawal, other ATM: R11,10

Calculate the bank charges on each of the following transactions.

(a) She withdrew R750,00 from a FNB ATM on 20 February. (2)

(b) On 12 February she deposited R500,00 at an ATM. (3)

(c) Determine the closing balance on 28 February if the total bank charges for the month amounts to R95,45. (2)

1.4 Derick wants to buy himself a new car and decides to purchase a VW Polo Vivo at R179 900. He considers a hire purchases contract and he uses a vehicle finance calculator on the internet to determine how much the car will cost him. He will pay a deposit of R15 000,00 and there will be a balloon payment of 20% of the cost price of the car at the end of the period. There is a once off initiation fee of R1 207,50 payable which is included in the amount financed. There is also a monthly admin fee of R69,00 payable. He will pay back the financed amount in equal monthly instalments over a period of 5 years at an interest rate of 13,75% per year. Study the vehicle finance calculator in **ANNEXURE A** and answer the questions that follow:

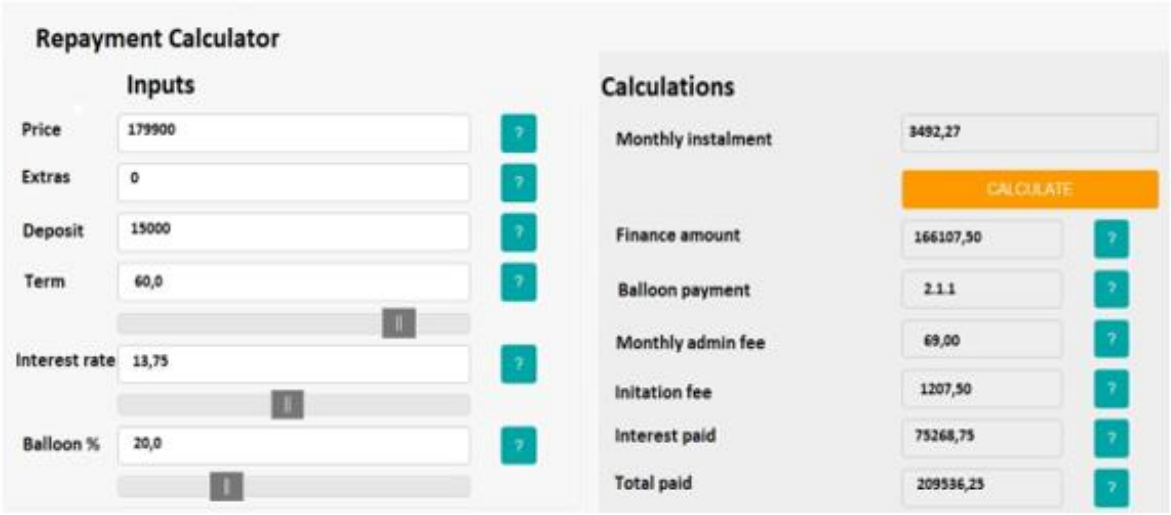
1.4.1 Calculate the balloon payment of 20% on the cost price, payable at the end of the period. (2)

1.4.2 Show how the financed amount of R166 107,50 was calculated. (2)

1.4.3 Calculate the total cost of the vehicle. (4)

1.4.4 Derick is concerned that he will not be able to pay the monthly payments and decides to postpone the purchases of the vehicle with two years. How much would the vehicle, which costs R179 900,00 during the present year, cost in two years' time if the expected inflation rate for the following two years is 6,35% per year? (3)

ANNEXURE A



QUESTION 2

2.1 ANNEXURE B shows an extract of the expenditure statement of the University of Stellenbosch for 2015 and 2016 for the remuneration packages for the Executive management.

Use ANNEXURE B to answer the questions that follow.

2.1.1 Determine the number of months in 2015 that Prof. de Villiers received remuneration. (2)
2.1.2 Write down the amount that Prof. Cloete received as a bonus in 2015. (2)
2.1.3 Determine the total amount paid for basic remuneration in 2016. (2)

2.1.4 How much more did Prof. Schoonwinkel received as basic remuneration in 2016 than in 2015? (2)

2.1.5 Calculate Prof. Koopman's bonus for 2015, rounded to the nearest R1 000, if the bonus he received was 10,5% of his basic remuneration for 2015. (3)

2.1.6 Determine the number of persons of the executive management that received remuneration for the full year in 2015. (2)

2.1.7 Name the only person whose leave was paid out. (2)

2.1.8 Determine the probability, as a percentage, of randomly selecting an executive manager who received a bonus in 2016. (3)

2.1.9 Prof. van Huysteen decided to put his bonus of 2015 in a fixed deposit account at 9,5% simple interest per annum.
Calculate the total amount that Prof. van Huysteen will receive after two years if he then withdraws all his money. (5)

ANNEXURE B: QUESTION 2.1

RENUMERATION PACKAGES FOR THE EXECUTIVE MANAGEMENT OF THE UNIVERSITY OF STELLENBOSCH

NAME	TYPE	TOTAL 2016 (R000)	PERIOD 2016	TOTAL 2015 (R000)	PERIOD 2015
Prof. de Villiers	Basic remuneration	4 001	Jan – Dec	2 806	Apr – Dec
	Bonus	300	Jan – Dec	-	-
	Additional remuneration	-	-	50	Apr – Dec
Prof. Schoonwinkel	Basic remuneration	2 195	Jan – Dec	1 994	Jan – Dec
	bonus	-	-	113	Jan – Dec
	Leave paid out	81	Jan – Dec	1 120	Jan – Dec
	Additional remuneration	-	-	100	Jan – Dec
Prof. Cloete	Basic remuneration	2 173	Jan – Dec	1 972	Jan – Dec
	Bonus	-	-	113	Jan – Dec
	Additional remuneration	3	Jan – Dec	76	Jan – Dec
Prof. van Huyssteen	Basic remuneration	2 794	Jan – Dec	2 520	Jan – Dec
	Bonus	-	-	155	Jan – Dec
	Additional remuneration	-	-	680	Jan – Dec
Prof. Koopman	Basic remuneration	1 735	Jan – Dec	685	Jun – Dec
	Bonus	-	-	...	Jun – Dec
	Additional remuneration	385	Jan – Dec	479	Jun – Dec
Prof. Klopper	Basic remuneration	910	Aug – Dec	-	-

[Adapted from www.sun.co.za]

2.2 Ivan wants to advertise his new business by means of pamphlets, business cards, banners and posters.

TABLE 3 below shows the cost structure for these advertising materials for June 2018.

TABLE 3: COST STRUCTURE FOR ADVERTISING MATERIAL (JUNE 2018)

TYPE	NUMBER	COST (VAT excluded)	COST (VAT included)
Pamphlets A5	5 000	R999	R1 148,85
	10 000	R1 499	R1 723,85
	20 000	R2 899	R3 333,85
Business cards	500	R299	R343,85
Posters A2	200	R1 999	R2 298,85
Posters A1	200	R2 999	R3 448,85
Banner 2 m long	1	R799	R918,85

[Adapted from www.flyerz.co.za]

Also available: Brochures, files, magazines and calendars
VAT = 15% from 1 April 2018

Use TABLE 3 to answer the questions that follow.

2.2.1 What is the cost (VAT excluded) for 200 A2 posters? (2)

2.2.2 Name ALL the other items, excepts those of which the prices are indicated, that are also available at this company. (2)

2.2.3 Calculate the difference in the amount of VAT that is charged on 200 A2 posters in May 2018 compared to May 2017, if the price without VAT stayed the same for both the above-mentioned months. (3)

2.2.4 Determine the unit cost per A5 pamphlet (VAT included) for 5 000 pamphlets. (3)

2.2.5 Calculate the total amount that Ivan will pay if he decides to order the following advertising material and receives 25% discount:

5 000 A5 pamphlets; 1 000 business cards; 200 A1 posters and 1 banner. (6)

2.3 Masakhane community purchased a UHD digital television from a furniture store on hire purchase. The hire purchase agreement is show on ANNEXURE C.

Use ANNNEXURE C to answer the questions that follow.

2.3.1 Calculate the deposit amount paid by Masakhane on the hire purchase agreement. (2)

2.3.2 Explain the term “credit” in this context. (2)

2.3.3 Calculate the interest amount Masakhane pays every month. (2)

2.3.4 Determine the date (month and year) for the payment of the last instalment. (2)

2.3.5 Calculate the Value Added Tax (VAT = 15%) amount on the insurance. (3)

ANNEXURE C

HIRE PURCHASE AGREEMENT CREDIT AGREEMENT CUSTOMER: MASAKHANE COMMUNITY KURUNGAI LOCATION			
ACCOUNT NUMBER: 2019/7/0034/801		DATE OF PURCHASE: 1/07/2019	
COST OF CREDIT			
TOTAL GOODS VALUE **86" UHD Digital TV**	**R49 999,99**	**TOTAL DEFERRED AMOUNT BROUGHT FORWARD**	**R46 875,00**
Less deposit (10% of the goods value)	----------	Add interest for 24 months at 10,75% per annum on deferred amount	R10 078,13
Less discount	R0,00	**TOTAL DEFERRED AMOUNT**	**R56 953,13**
ADD ADDITIONAL CHARGES SUBJECT TO INTEREST		**ADD ADDITIONAL CHARGES NOT SUBJECT TO INTEREST**	
*Extended guarantee	R1 000	*Insurance	R14 400
*Delivery charges	R500	Total cost of credit	R71 353,13
*Initiation fee	R375	Add back deposit	----------
TOTAL DEFERRED AMOUNT CARRIED FORWARD	**R46 875,00**	**CONTRACT TOTAL**	**R76 353,12**
		Items marked with asterisk (*) are inclusive of Value Added Tax-VAT 15%)	
INSTALMENT PAYMENT Total cost of credit is payable in 23 monthly instalments of R2 973,04 commencing on 1/8/2019 and the final instalment payment of R2 973,21.			

Question 3 in this section of Finance are Level 3 and 4 Questions (These questions will be in your second question paper. These type of questions needs multi step calculations and in some cases, a conclusion must also be added to the final answer)

QUESTION 3

3.1 Tom works for a company that installs alarm systems. The manager used a bank account to pay the employees' weekly wages.
Table 6 below shows a comparison of the cash – withdrawal fee structures of two banks.

TABLE 6: CASH-WITHDRAWAL FEE STRUCTURE FOR TWO BANKS.

BANK	2018 FEE
A	R5,95 + R1,50 per R100
B	R4,00 + 1,25% of withdrawal amount

The company withdrew R20 000 for the weekly wages every Friday. The financial officer stated that the company would have saved more than R200 in withdrawal fees if they had used Bank B rather than Bank A for the 4 withdrawals.

Verify whether this statement is valid. (8)

3.2 Mr Stone is a government employee who is interested in buying a property in Nelspruit. TABLE 1 on ANNEXURE C shows an extract of an estate agent's home loan agreement.

Use the information on ANNEXURE D to answer the following questions.

3.2.1 Calculated the loan amount granted. (3)

3.2.2 Calculate the discounted monthly instalment as a percentage of the contractual monthly instalment to the nearest percentage. (2)

3.2.3 Calvin claimed that the original registration fee for the house was more than R23 000,00. Verify by calculation whether his claim is correct. (4)

3.2.4 Why do you think Calvin was charged an effective rate of 10%? (2)

3.2.5 Use ANNEXURE C and the TABLE below to verify if the discounted monthly instalment was calculated correctly. (4)

Monthly instalment = $\frac{Amount\ granted}{1000} \times factor$

TABLE: BOND REPAYMENT FACTOR TABLE

		Loan period in years				
		10	**15**	**20**	**25**	**30**
Interest rate per annum	**8%**	12,13	9,56	8,36	7,72	7,34
	8,5%	12,4	9,85	8,68	8,05	7,69
	9,0%	12,67	10,14	9	8,39	8,05
	9,5%	12,94	10,44	9,32	8,74	8,41
	10%	13,22	10,75	9,65	9,09	8,78
	10,5%	13,49	11,05	9,98	9,44	9,15
	11%	13,78	11,37	10,32	9,8	9,52
	11,5%	14,06	11,68	10,66	10,16	9,9
	12%	14,35	12	11,01	10,53	10,29
	13%	14,93	12,65	11,72	11,28	11,06
	14%	15,53	13,32	12,44	12,04	11,85

Source: http://huis-huis.co.za/bond_repayment_factor_table_full.htm

ANNEXURE D: HOUSE ADVERTISMENT

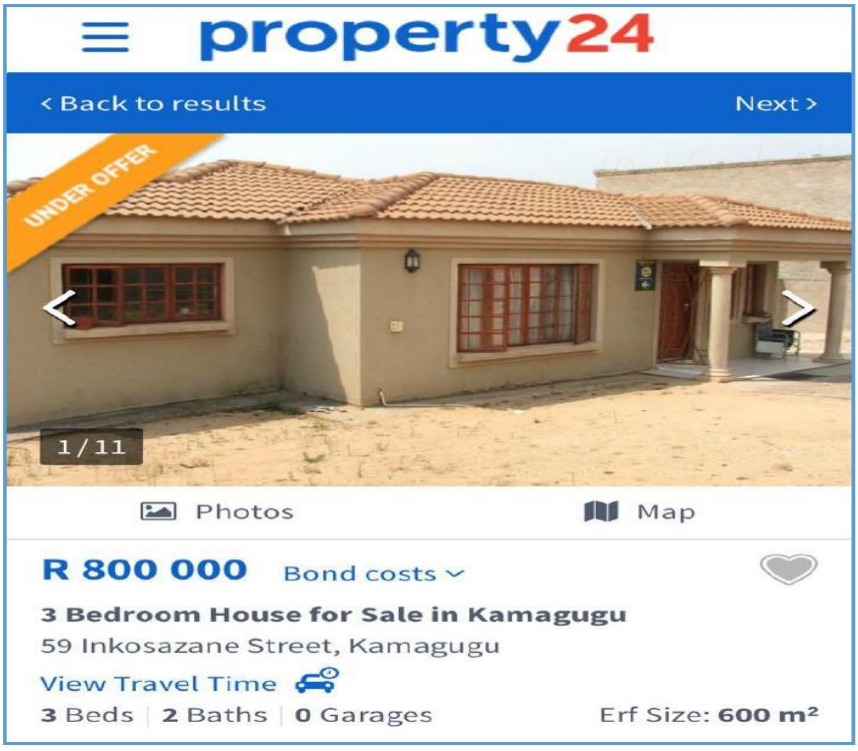


TABLE 1: HOME LOAN AGREEMENT

	Contractual Rate	Discounted Rate
Cash price	R800 000,00	
Deposit	20%	
Loan Term	20 years	
Loan amount granted	.....	
Market Rate	7%	7%
Link Rate	4%	4%
Stop order		-1%
Effective rate	11%	10%
Monthly instalment	R6 606,01	R6 176,14
Interest paid over term	R945 441,37	R842 273,25
Registration fee (discounted by 40%)	.....	R13 762,10
Initiation fee	R6 037, 50	R6 037,50
Total fees		R19 799,60

The final interest rate is 1% less for GEPF (government employees' pension fund) members.

MAPS AND PLANS

A map is a two-dimensional representation of an area e.g. country-, street-, building map, etc.

Question 1 in the section of Maps and Plans are Level 1 and 2 Questions (These questions will be in your first question paper. This type of questions mostly need one line or one step answers)
Maps and Plans will cover 15% of your Question Papers in the final examination.
All these maps and plans questions were covered in the second and third week's lessons.

QUESTION 1

1.1 The route map from the main campus of the UP (University of Pretoria) to the Groenkloof campus is shown on ANNEXURE A.

Use ANNEXURE A to answer the following questions.

1.1.1 In which street is the entrance to the main campus of the UP? (2)

1.1.2 In which general direction is the Groenkloof campus from the main campus of the UP? (2)

1.1.3 Which neighborhood/area will you reach when you continue in a southerly direction with Florence Ribeiro street? (2)

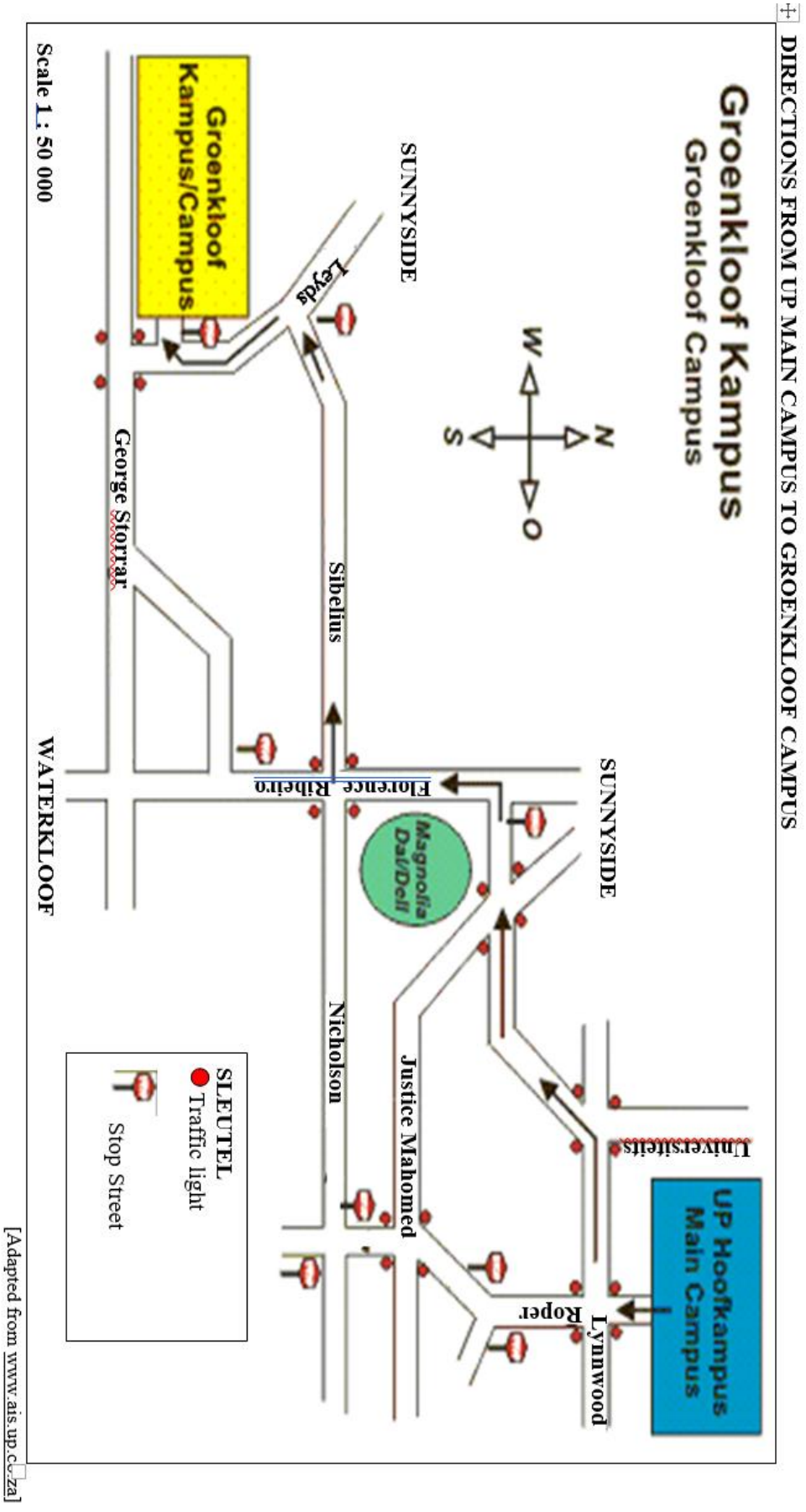
1.1.4 The Magnolia Dal is situated on the corner of two streets. Name the two streets. (2)

1.1.5 The directions on how to get from the UP's main campus to the Groenkloof campus is indicated by the arrows.
Provide a set of written directions for the route that is indicated by the arrows if you DO NOT use the route along Roper street. (5)

1.1.6 A set of traffic lights consists of 4 traffic lights, one at each corner.
How many sets of traffic lights are indicated on the route map? (2)

1.1.7 Use the given scale to determine the actual distance (in km) from Florence Ribeiro street from the traffic light to the intersection with George Storrar Street if the measured distance is 30 mm. (4)

ANNEXURE A QUESTION 1.1



1.2 Lethabo stays in Midrand and he plans to visit Alexandra. ANNEXURE B shows the map of suburbs in Johannesburg.

Use ANNEXURE B to answer the questions that follow.

1.2.1 Name the national roads that Lethabo will use to travel to Alexandra. (2)

1.2.2 Give the general direction of Alexandra from Midrand. (2)

1.2.3 Identify three suburbs that Lethabo will pass on his way to Alexandra. (3)

1.2.4 The distance from Midrand to Alexandra is 22 km. Lethabo was driving at an average speed of 120 km/h from Midrand to Alexandra. Calculate the time spent on the road in hours and minutes.
You may use the following formula: (3)

Time = $\frac{Distance}{speed}$

1.2.5 If the distance between Midrand and Alexandra is 6,5 cm on the map, write down the scale of map in the form 1: …… (3)

1.3 Emnandi Mall is a new mall in Johannesburg North. Some of the new tenants have already opened their stores but there are still a few unoccupied stores.

Refer to ANNEXURE C in the addendum and answer the questions that follow.

1.3.1 Which entrance is the closest to Top Tupperware store? (2)

1.3.2 Woolworths sell clothes, household accessories, meat, fruits and vegetables. Give the number of the shop that would suit them best? (2)

1.3.3 Follow the directions and give the name and number of the shop that Thandi will reach.

- Thandi enters Emnandi Mall at entrance 2 and walks in a northern direction past Vodacom.
- She turns in a north-western direction at Vodacom.
- At the first corridor, she turns right.
- She continues straight and walks past the restaurant situated on her right-hand side.
- She turns right and walks straight ahead where she will find the shop. (2)

1.3.4 Thandi enters Emnandi Mall at Entrance 2 and needs to go to "Chops & T-Bones". Give her directions to reach the store. (4)

1.3.5 Give the general direction from store 218 to store 255. (2)

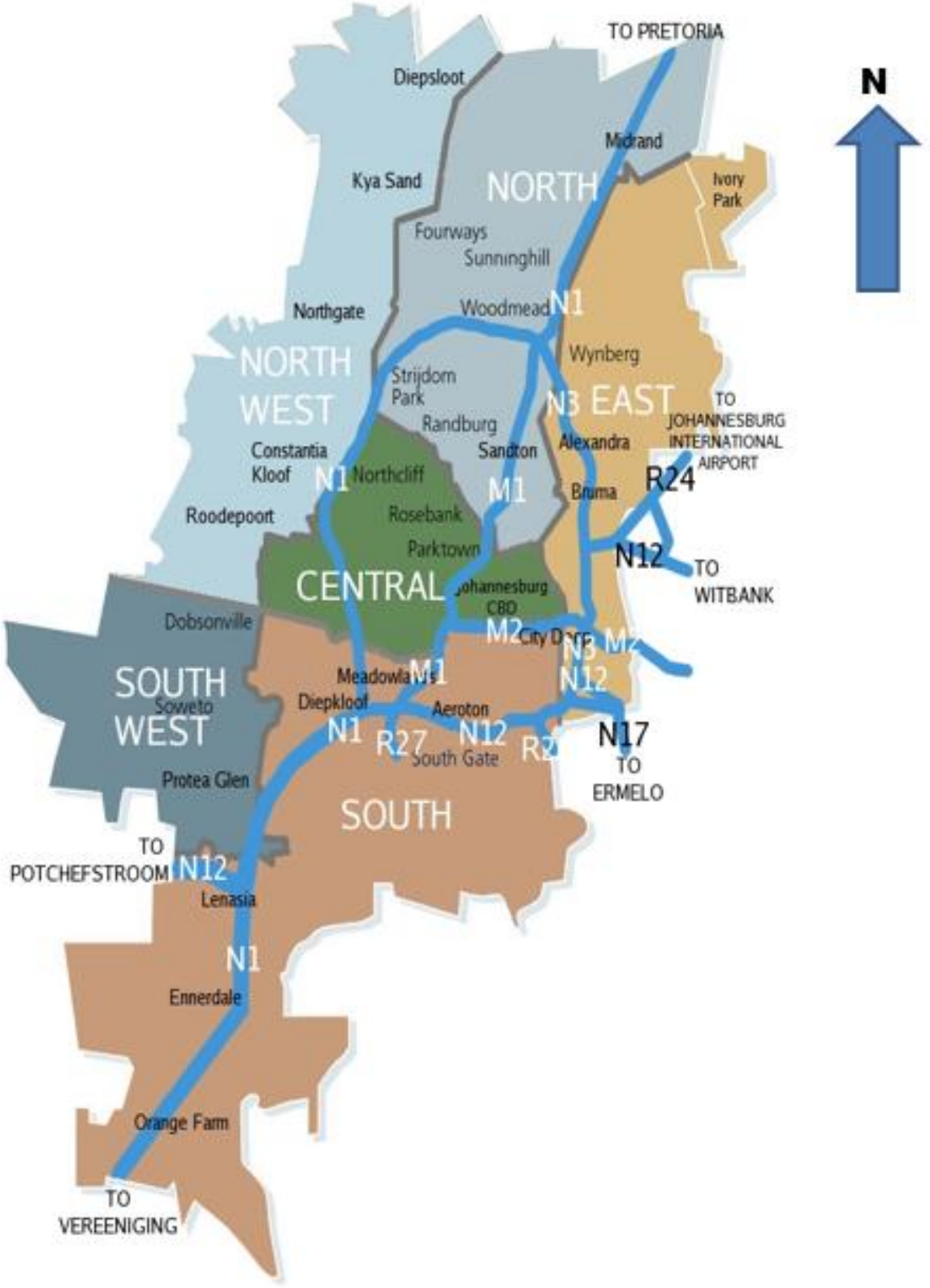
1.3.6 It takes Thandi 15 minutes to travel 215 metres through the mall. Calculate her average speed. Give your answer in metres per second.
You may use the following formula:

Average Speed = $\frac{Distance\ travelled}{Time\ taken}$ (3)

ANNEXURE B

QUESTION 1.2

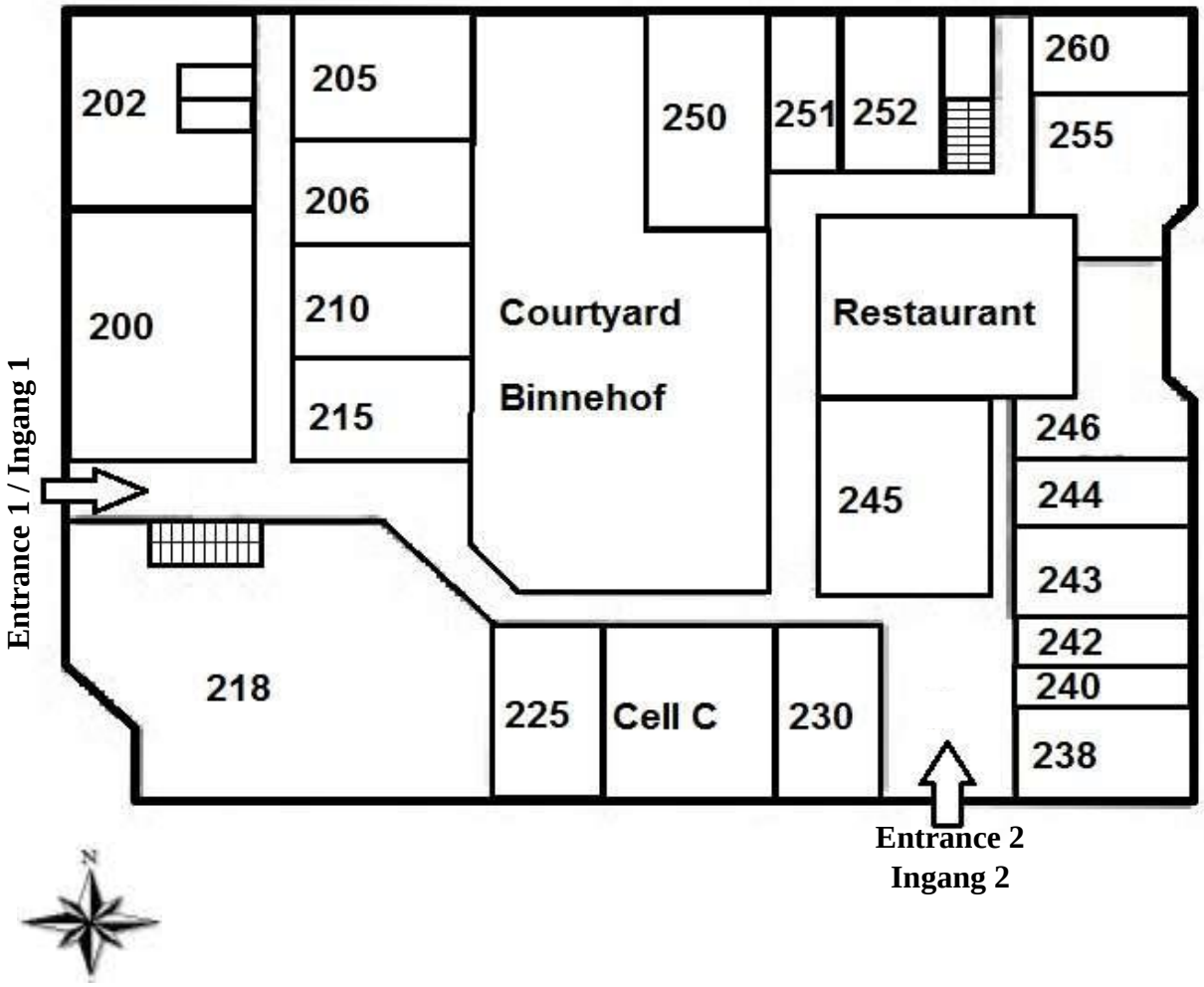
THE MAP OF JOHANNESBURG SUBURBS



ANNEXURE C

QUESTION 1.3

FLOORPLAN OF EMNANDI MALL



KEY / SLEUTEL					
200	Mistique Boutique	230	Vodacom	246	Fashion Fuse
202	Top Tupperware	238	–	250	–
205	Chops & T-Bones	240	–	251	Electronic Empire
206	Lila Laundromat	242	–	252	–
210	Fish & Chips	243	–	255	Bandit Brothers
215	Magnolia Flowers	244	–	260	–
218	–	245	–		
225	MTN				

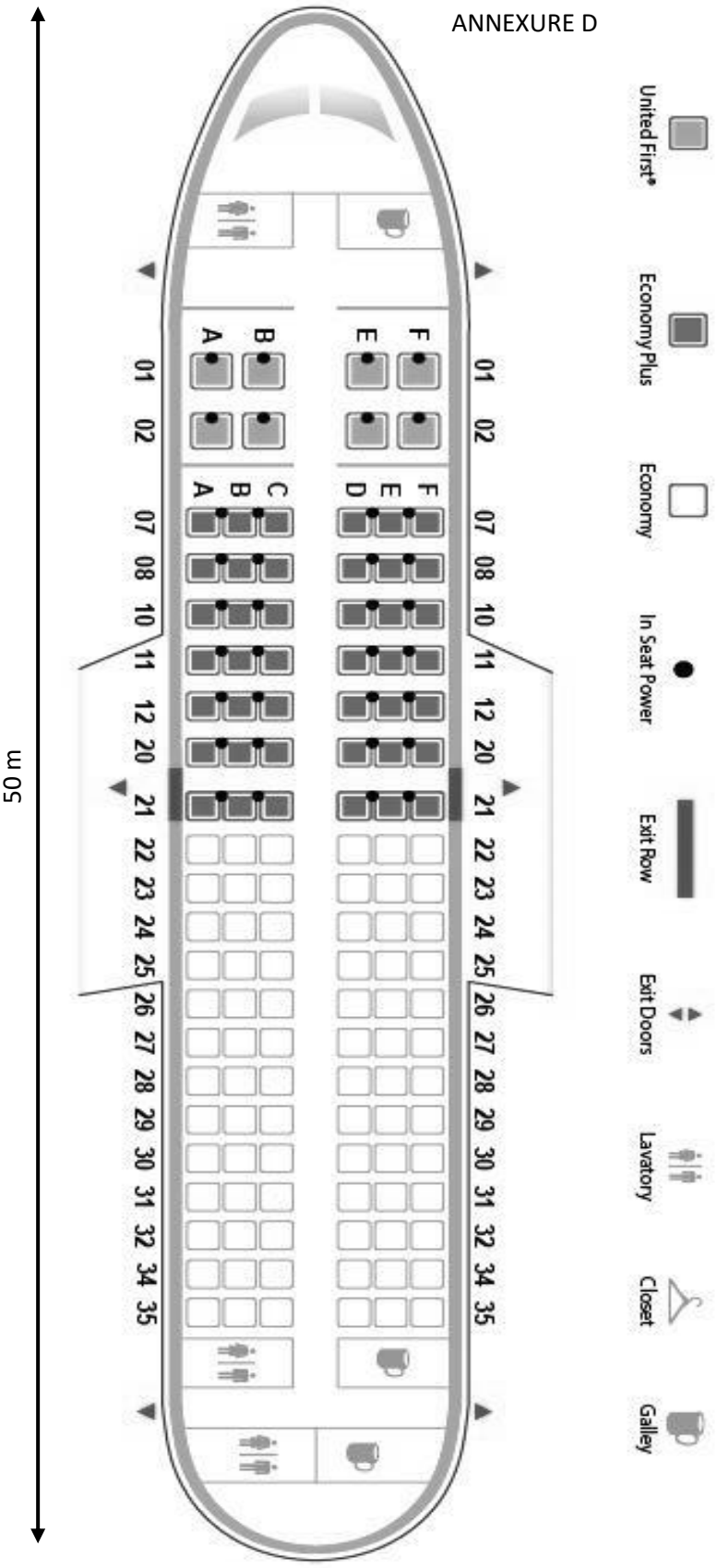
1.4 Study the seating plan of an airplane on ANNEXURE D and answer the questions that follow.

1.4.1 How many exit doors are indicated on the seating plan?

1.4.2 Write down the row numbers of the Economy Plus class seats that have in-seat power.

1.4.3 The actual length of the airplane (from the cockpit to the end of the passenger cabin) is given as 50 m. If the scale of the seating plan is 1: 200, calculate the length of the airplane on the seating plan in mm.

ANNEXURE D



Question 2 in this section of Maps and Plans are Level 3 and 4 Questions (These questions will be in your second question paper. These type of questions needs multi step calculations and in some cases, a conclusion must also be added to the final answer)

QUESTION 2

2.1 Tom is planning a trip to Pietermaritzburg. ANNEXURE E shows a map of South Africa with all the towns, cities and all the national roads that Tom might pass on his trip from Pretoria to Pietermaritzburg.

2.1.1 State ONE advantage of using national roads. (2)

2.1.2 The straight line distance from Pretoria to Pietermaritzburg is approximately 545 km. Determine the scale of the map. Round off your answer to the nearest 1 000. (4)

2.2 Tom will use his new Mazda3, with 1.6 litre engine capacity to travel from Pretoria to Pietermaritzburg and back home.
A full tank of petrol for the car is 55 litres. The price of unleaded 95 petrol was R15,54 per litre in June 2018.The distance along the N3 to Pietermaritzburg is approximately 545 km.

2.2.1 The specifications of the car indicate that a full tank covers 650 km at an average speed of 120 km/h.Use calculations to verify whether he will need 2 full tanks of petrol for the return trip. (3)

2.2.2 Calculate the total cost of petrol for the full tanks for a return trip. (3)

2.3 Tom states that the cost of petrol is not the only factor to consider when travelling by car. Table 5 below represents a list of other different cost for the car that Tom drives.

TABLE 5: LIST OF OTHER COSTS FOR THE CAR

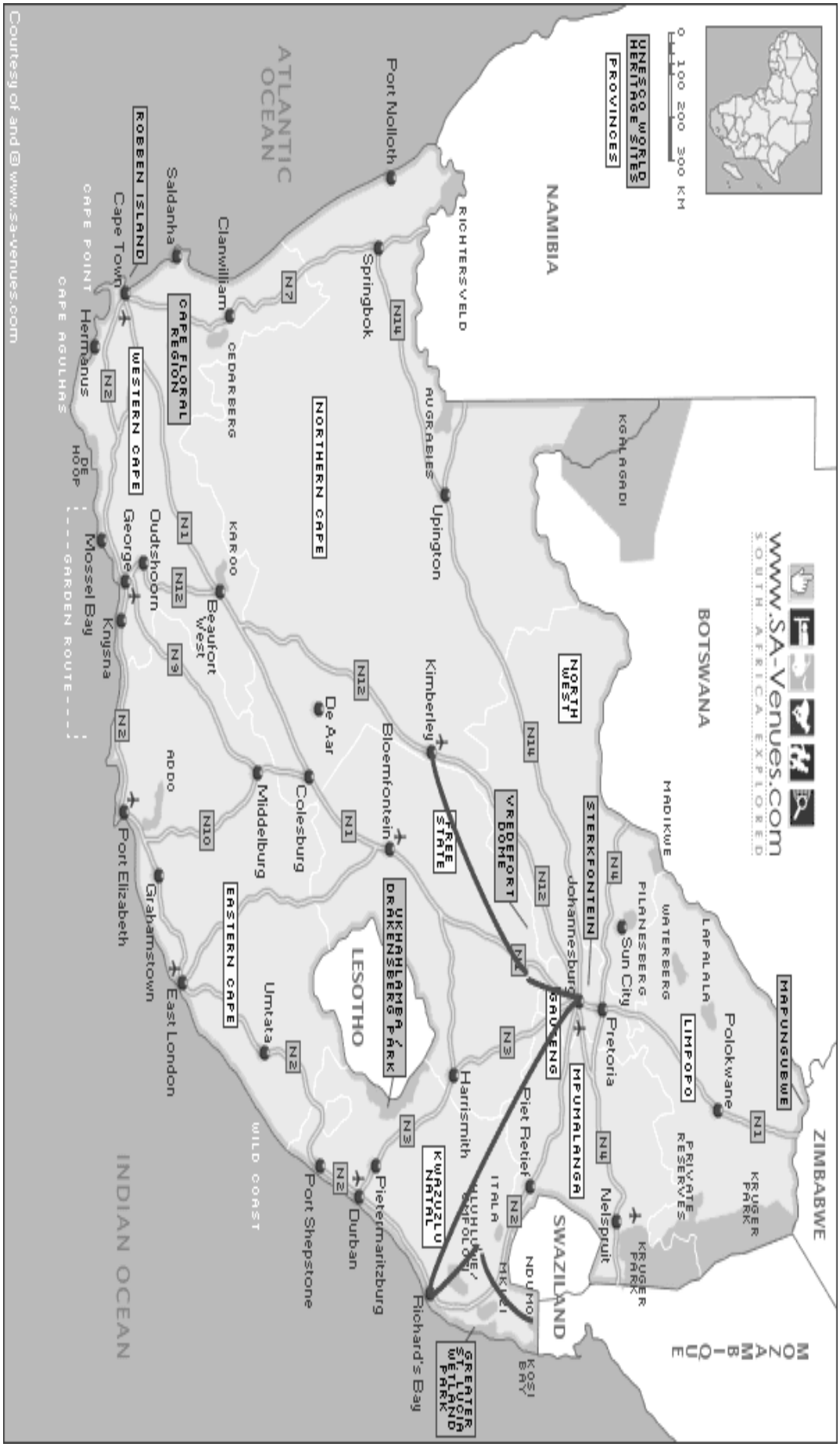
COST FACTORS	**PRICE IN CENTS PER KILOMETRE**	**PETROL FACTOR**
Fixed costs	788	
Running Costs:		
Fuel		8,03
Service and Repair Cost	22,73	
Tyre Cost	16,70	

When Tom was taking the trip from Pretoria to Pietermaritzburg single trip, the petrol price was R15,54 per litre. Calculate the total operating cost of travelling between the two towns. Give your answer in Rand.

You may use the formula:

Total operating costs = [Fixed cost + (Petrol factor × Petrol price per litre + Service and Repair cost + Tyre cost)] × distance travelled. (4)

ANNEXURE E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Kimberley
Bloemfontein
Johannesburg
Pretoria
Sun City
Polokwane
Nelspruit
Piet Retief
Harrismith
Richard's Bay
Durban
Pietermaritzburg
Port Shepstone
East London
Grahamstown
Port Elizabeth
Middelburg
Colesburg
De Aar
Beaufort West
Oudtshoorn
George
Knysna
Mossel Bay
Cape Town
Hermanus
Saldanha
Clanwilliam
RICHTERSVELD
KGALAGADI
AUGRABIES
KAROO
CEDARBERG
CAPE POINT
CAPE AGULHAS
DE HOOP
GARDEN ROUTE
WILD COAST
NORTHERN CAPE
WESTERN CAPE
EASTERN CAPE
CAPE FLORAL REGION
ROBBEN ISLAND
NORTH WEST
FREE STATE
GAUTENG
MPUMALANGA
LIMPOPO
KWAZULU NATAL
MAPUNGUBWE
WREDEFORT DOME
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MEASUREMENT

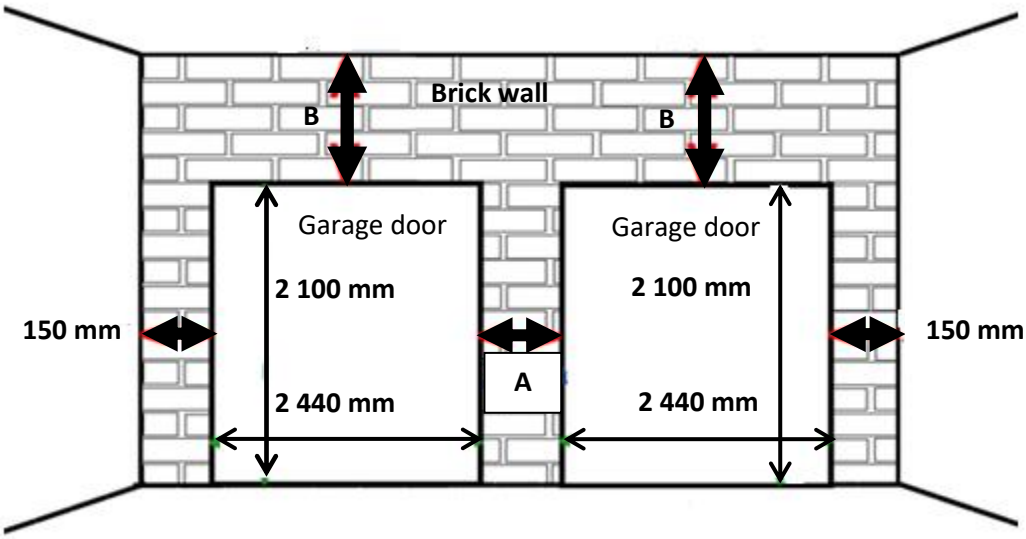
In this section, you must be able to measure length, distance, weight, temperature and time. You must be able to do conversions and calculations involving above mentioned metric units.

Question 1, 2 and 3 in the section of Measurement are Level 1 and 2 Questions (These questions will be in your first 1 question paper. This type of questions mostly need one line or one step answers)
Measurement will cover 20% of your Question Papers in the final examination.
All these measurement questions were covered in week's 7 lesson.

QUESTION 1

1.1 The diagram below shows the dimensions of two single garage doors that are surrounded by a brick wall build with a single layer of bricks.

DIAGRAM OF GARAGE DOORS



NOTE:

- A is the length of the wall between the two garage doors
- B is the length of the wall between the garage doors and the roof

150 mm is the distance between the door and the side wall.

Use the diagram to answer the following questions.

1.1.1 Write down the length and width of one garage door, in meter. (3)

1.1.2 The total length of the wall in which the garage doors are situated is 5 480 mm.
Calculate **A**, the length of the wall between the two garage doors, in mm. (2)

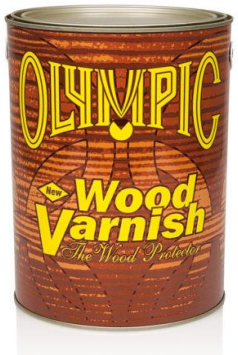
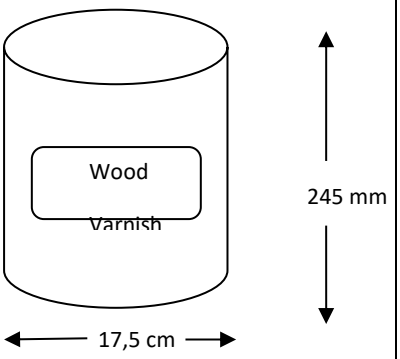
1.1.3 Hence determine the total area of the two garage doors.

You may use the following formula:

Area of a rectangle = length $\times$ width (3)

1.1.4 Calculate the total area of the part of the wall that consists of bricks if **B** is 1,5 times the length of **A**. Give your answer in m². (7)

1.2 The garage doors must be covered with wood varnish to protect it. The product is sold in 5 l cans as indicated in the diagram below.

PHOTO OF CAN	DIAGRAM OF CAN
	

1.2.1 (a) Convert the height of the can to cm. (2)

(b) Determine the radius of the can (in cm). (2)

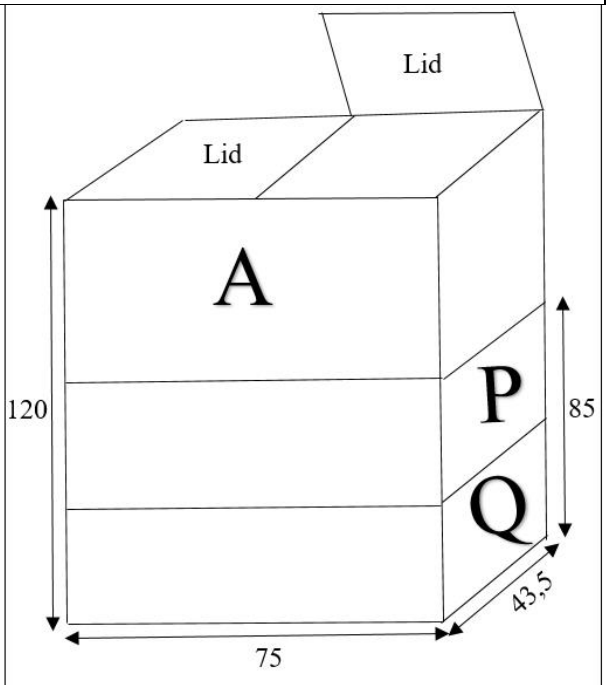
1.2.2 Calculate the volume of the can in cm³. Round off your answer to the nearest 10 cm³.

You may use the following formula:

Volume of the cylinder = π × (radius)² × height, using π = 3,142 (3)

QUESTION 2

2.1 Pikitup is a company that removes refuse from residential sites. Each container, given to a household, is an open-top rectangular prism with two identical rectangular lids. The picture and the dimensions of the refuse container are shown in the diagrams below.

Photograph of three-dimensional view of the container	**Diagram of three-dimensional view of the container (all dimensions are centimetre)**
	

Use the information above and answer the questions that follow.

2.1.1 What is the height of the part, in metre, of the container marked P if areas P and Q have the same height? (3)

2.1.2 Determine the width and length of one rectangular lid. (3)

2.1.3 Calculate the area, in mm^2, of one rectangular lid.
You may use the following formula:

Area of a rectangle = length x width (4)

2.1.4 Determine the volume in cm^3, to the nearest 1 000, of the area marked A.
You may use the following formula:

Volume of a rectangular prism = length x width x height (5)

2.2 Cape Town stadium has one of the largest soccer fields in South Africa. The managers of the stadium want to replace the grass of the soccer field. Rectangular blocks of grass of 150 cm × 80 cm will be used to cover the soccer field.

NOTE:
Length of the soccer field = 110 meters
Width of the soccer field = 80 yards
Diameter of the circle in the centre of the soccer field = 14,64 metres

1 metre = 1,0936 yards

2.2.1 Determine the width (in m) of the soccer field.

2.2.2 Calculate the area of the grass in metres squared (m^2) that needs to be replaced.

The following formula may be used:

Area = length × width

2.2.3 Calculate how many blocks of grass will be required to cover the soccer field.

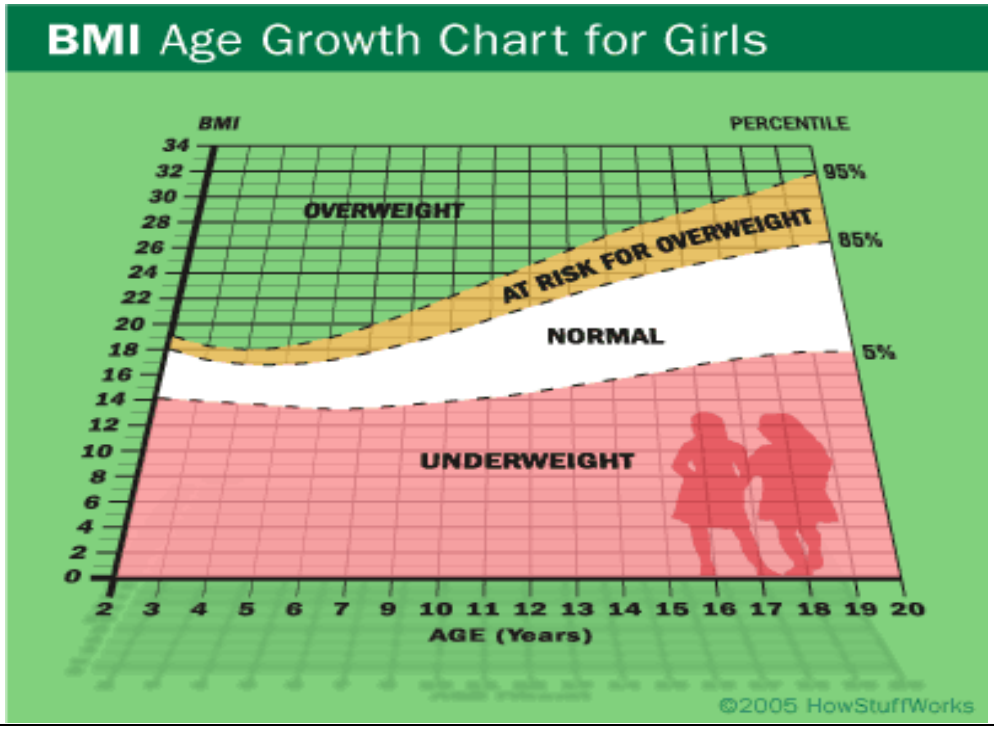
2.2.4 Determine the radius of the circle in the centre of the soccer field.

2.2.5 Write down the letter that represents the correct formula that can be used to calculate the circumference of the circle:

A $C = 2\pi r^2$
B $C = \pi r$
C $C = 2\pi r$
D $C = \pi r^2$

QUESTION 3

3.1 Mary is a nurse at Pholong clinic. She demonstrates the use of growth charts of both boys and girls to parents when they visit the clinic.



Use the Body Mass Index chart above to answer the questions that follow.

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

3.1.2 What does it mean when a girl has a BMI-for-age relationship that is positioned on the 85th percentile curve? (2)

3.1.3 Consider a 14-year-old girl with the weight of 36 kg and has a BMI of 24,5 kg/m^2.

(a) Identify the weight status category of this girl. (2)

(b) Calculate the girl`s height (in metres) rounded off to TWO decimal places.

You may use the following formula:

(4)

$$\text{BMI} = \frac{\boldsymbol{Weight\ (in\ kilograms)}}{\boldsymbol{(Height\ in\ metres)^2}}$$

3.1.4 Mary stores some of the medications in the fridge at a temperature of 5,99°C.
Convert (rounded off to the nearest whole number) the temperature of 5,99°C to °F.

You may use the following formula:

(3)

°F = (1,8 × °C) + 32

3.2 Paula is a receptionist at Pholong clinic. The layout of the waiting room and the reception area are given on ANNEXURE A.

Use the information on ANNEXURE A to answer the questions that follow.

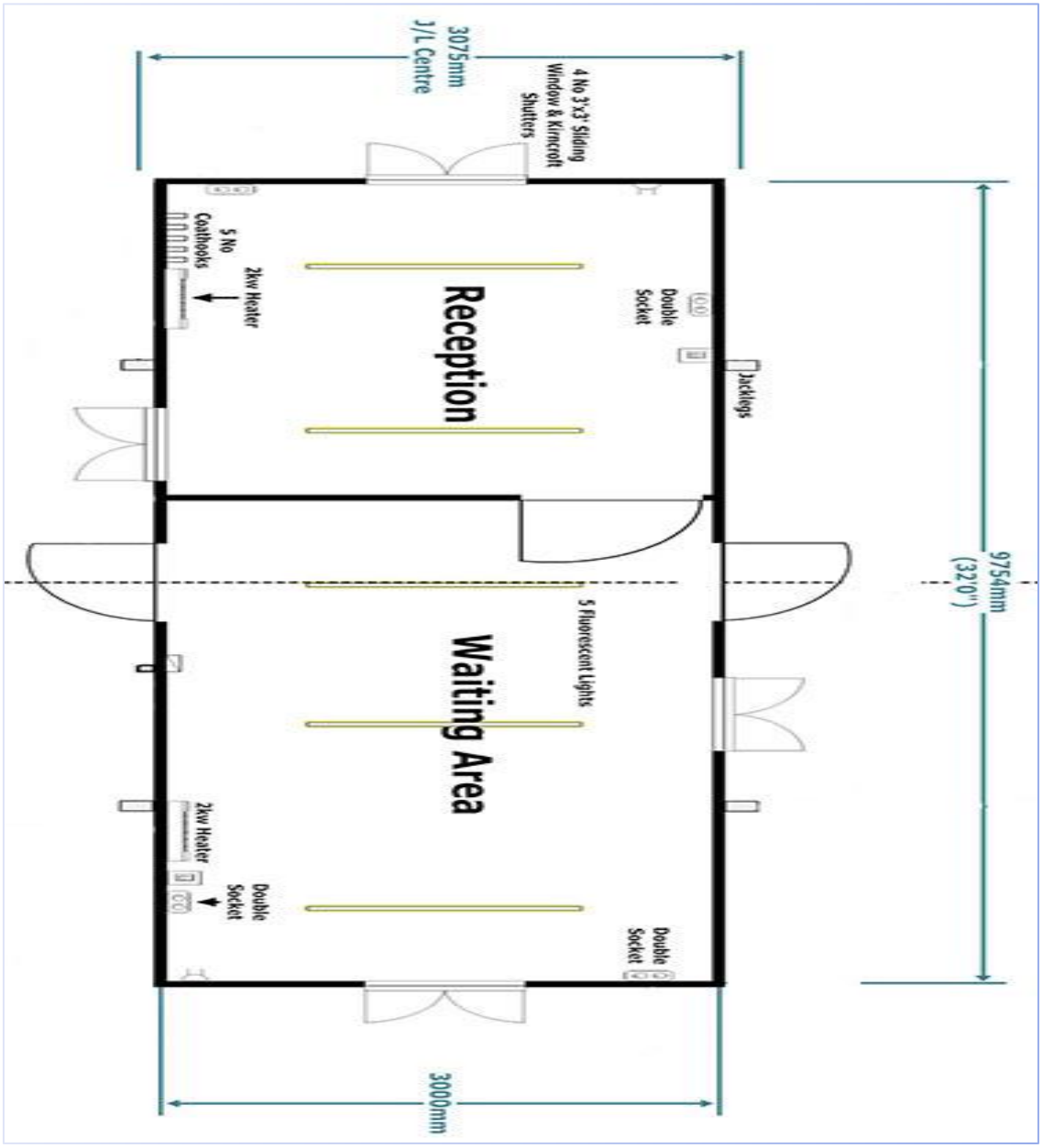
3.2.1 Calculate the perimeter of the waiting room if it is $\frac{2}{3}$ of the total perimeter. (4)

3.2.2 Calculate the area (in cm^2) of the floor plan.

You may use the following formula:

Area = length × width (3)

ANNEXURE A



Question 4 in this section of Measurement are Level 3 and 4 Questions (These questions will be in your second question paper. These type of questions needs multi step calculations and in some cases, a conclusion must also be added to the final answer)

QUESTION 4

4.1 John and Judy want to build a fire pit in their back yard. They searched on the internet and got the idea as indicated on ANNEXURE B. The hole for the fire pit must be 4 feet wide and 12 inches deep.

NOTE:
1 foot = 30,48 cm
1 inch = 2,54 cm
1 gallon = 3,7854 ℓ

Use ANNEXURE B to answer the questions that follow.

4.1.1 Determine the radius, in centimetre, of the fire pit. (4)

4.1.2 Determine the volume of the fire pit in cm^3.

You may use the following formula:

Volume of cylinder = π × radius² × height; using π = 3,142 (4)

4.1.3 John states that the area of 2 m^2 is enough space for the hole for the fire pit.
Verify the statement, showing ALL calculations.

You may use the following formula:

Area of circle = π × radius²; using π = 3,142 (5)

4.1.4 A layer of three 5 gallon buckets of lava rocks must be placed in the hole. Judy said two and three quarters of a 20 ℓ bucket is the equal amount. Verify her statement. (6)

4.2 John and Judy will be building a wall around the fire pit. When the fire pit is not used, they will place a wooden top over it to use it as a table. The hole for the fire pit is 4 feet wide and 12 inches deep.

NOTE:
1 foot = 30,48 cm
1 inch = 2,54 cm

Use ANNEXURE B to answer the questions that follow.

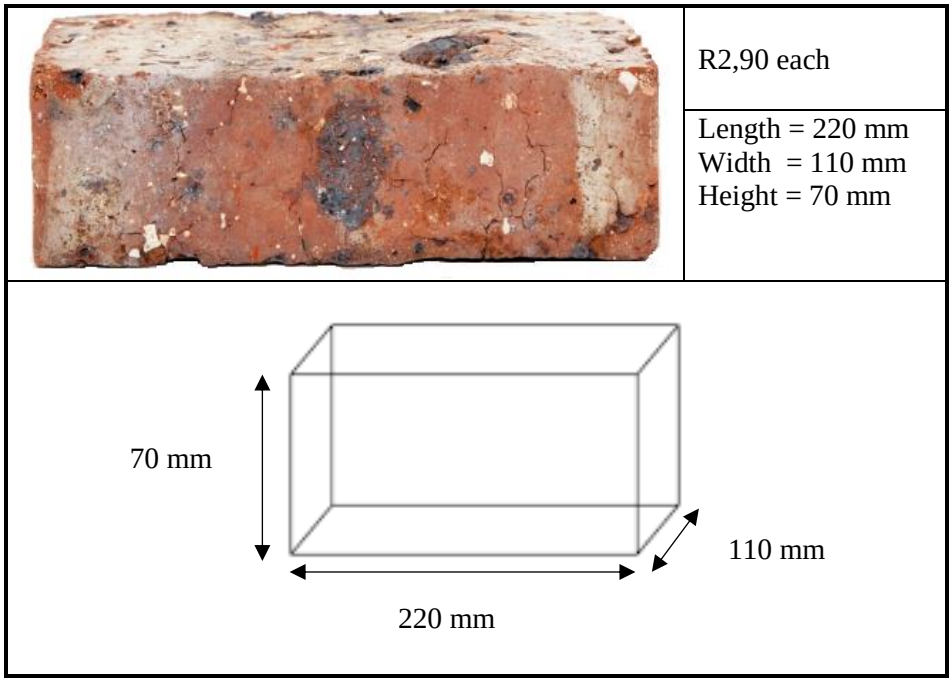
4.2.1 The wall around the fire pit will consist of 4 layers of bricks on top of each other.
Determine the circumference of the pit in cm.

You may use the following formula:

Circumference of circle = 2 × π × radius; using π = 3,142 (3)

4.2.2 John and Judy will be using Solid Clay Bricks as indicated in the DIAGRAM below.

DIAGRAM: SOLID CLAY BRICKS



Determine the number of bricks, rounded to the nearest whole number, needed to complete the wall. (6)

4.2.3 Verify, showing ALL calculations, if R200 is enough to buy the bricks for the wall of the pit. (3)

ANNEXURE B

IDEAS FOR A FIRE PIT

[Adapted from www.pinterest.com]