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KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**CURRICULUM GRADE 10 – 12
DIRECTORATE**

NCS (CAPS) SUPPORT

**JUST IN TIME LEARNER
REVISION DOCUMENT**

MATHEMATICAL LITERACY

GRADE 12

POSSIBLE SOLUTIONS

2022

Finance

☐ Financial Documents

	ACTIVITY 1 FINANCIAL DOCUMENTS	
Ques.	SOLUTION	TL
1.1.1	University of Witwatersrand	F L1
1.1.2	Information Technology	F L1
1.1.3	Monthly salary (R)= R6 000 + R700× number of days	F L2
1.1.4	Fixed salary is the salary that Nompilo earn per month that does not change OR Fixed salary means that Nompilo will be paid the exact same salary every month	F L1
1.1.5	Monthly salary (R)= R6 000+ R700× no of days = R6 000 +R700 × 4 days =R6 000 + R2 800 =R8 800	F L2
1.1.6	Job A 3 Holidays +4 Saturdays+ 4 Sundays = 11 days Monthly salary= R6 000 +R700 ×11 days = R6 000 + R7 700 = R13 700 JOB B 30 days -3 holidays - 4 Sundays 23 days Monthly salary = R600 × 23 days =R13 800 JOB C = R16 500 Job C will be better for Nompilo	F L3
1.2.1	Bonus is the sum of money added to Nompilo's salary as reward for good performance	F L1
1.2.2	$\frac{45}{100}$ =0.45	F L1
1.2.3	$R16\,500 \times \frac{45}{100}$ =R7 425 $R16\,500 \times 2$ =R33 000 + R7425 = R40 425 Her statement is correct	F L4

	ACTIVITY 2 [25 MARKS]	
QUES.	SOLUTION	TL
2.1.1	One hundred and five thousand rand	F L1
2.1.2	Profit = Sales – cost of sales = R70 000 – R30 000 OR R70 – R30 = R40 000 = R40 Thousand	F L2
2.1.3	Water/ electricity/ telephone	F L1
2.1.4	$R105\,000 \div 10\,000$ OR $105 \div 10$ = R10.50 = R10.50	F L2
2.1.5	R40 000 – R23 475 OR 40 – 23.475 = R16 525 = R16 525	F L2
2.1.6	To protect the business from the risk of theft, fire and natural disaster	F L1
2.1.7	Percentage increase = $\frac{\text{new amount} - \text{old amount}}{\text{old amount}} \times 100$ $= \frac{R695 - R395}{R395} \times 100 \quad \text{OR} \quad \frac{R0,695 - R0,395}{R0,395} \times 100$ $= \frac{R300}{R395} \times 100 \quad \frac{R0,3}{R0,395} \times 100$ $= 75.95\% \quad 75.95\%$	F L2
2.1.8	High level of stock theft The shop has been broken into for a number of times Accept any appropriate answer	F L3
2.1.9	$R10\,500 \times \frac{15}{100}$ = R1,575 + R10,50 = R10.075 × 10 000 = R120 750 His statement is incorrect OR $R105\,000 \times \frac{15}{100}$ = R15 750 + R105 000 = R120 750 His statement is incorrect	F L4

Q1	SOLUTION (FINANCIAL DOCUMENTS)	Levels
1.1.1	An employee is somebody who has been appointed to do work and is paid a salary	L1
1.1.2	2022 – 1985 = 37 years	L1
1.1.3	Area Manager	L1
1.1.4	2022 – 2015 = 7 years	L1

1.1.5a	$R27\ 000 + R5\ 700 + R2\ 200 = R34\ 900$	L2
1.1.5b	$R2840,52 + R148,72 + (0.075 \times R27\ 000) + R4\ 376.59 = R9\ 390,83$	L2
1.1.6	$R5\ 700: R27\ 000$ $19 : 90$	L2
1.1.7	$\% = \frac{9390.82}{34900} \times 100\%$ $= 26.91\%$ The claim is not valid	L4
1.1.8	$(34\ 900 \times 12) + (0.95 \times 27\ 000)$ $418\ 800 + 26\ 650$ $444\ 450$	L3
Q2		
2.1.1	Miss T. Tenza	L1
2.1.2	4	L1
2.1.3	Prestige Plus current account	L1
2.1.4	A debit is an amount of money paid out of the account	L1
2.1.5	$582.14 + 25\ 695.98 + 391.07$ $= 26\ 669.19$	L2
2.1.6	$16 - 9 + 1 = 8$ days	L2
2.1.7	$100 + (6705.48 - 6204.38)$ $(100 + 501.10) \div 1.15$ $435,74$	L3
2.1.8	$\% = \frac{20 + 2400 + 2000 + 1600}{5569.75 + 4168.79} \times 100\%$ $= 61.812$ $= 62\%$	L3
2.1.9	Yes it is a wise idea. To keep details confidential and avoid fraudulent activities	L4

	Taxation	
	ACTIVITY 1	Downloaded from eduresourceza.com
1.1.1	Value Added Tax	
1.1.2	Number of years = 4	
1.1.3	The percentage by which the VAT is levied (charged)	
1.1.4	$\text{VAT exclusive price} = \text{R}15,99 \div 1,15$ $= \text{R}13,90$ OR $\text{VAT exclusive price} = \frac{115}{100} \times \text{R } 15,99$ $= \text{R}13,90$	
1.1.5	$\% \text{ change} = \frac{\text{VAT inclusive price} - \text{VAT exclusive price}}{\text{VAT exclusive price}} \times 100$ $= \frac{\text{R}15,99 - \text{R}13,90}{\text{R}13,90} \times 100$ $= \frac{\text{R}2,09}{\text{R}13,90} \times 100$ $= 15\%$	
1.1.6	A VAT exempt item is by law an item on which VAT must not be levied while a VAT exclusive item is the one on whose price VAT still has to be added to the given price.	
1.2.1	A government-initiated fund which gives short-term relief to workers when they become unemployed or are unable to work because of some temporary circumstances.	
1.2.2	Total = 2%	
1.2.3	$\text{Monthly ceiling UIF} = 1\% \times \text{R}17\,712$ $= \text{R}177,12$ $\text{Annual ceiling UIF} = 12 \times \text{R}177,12$ $= \text{R}2\,125,44$ $\text{Total amount to SARS} = 2 \times \text{R}2\,125,44$ $= \text{R}4\,250,88$	
Activity 2		
Ques	Solution	Topic/Level
2.1	Gross salary – is the total amount of money an employee receives before any deductions are taken out.	F L1
2.2	R555 600	F L1
2.3	$\text{Pension} = 7,5\% \times 28\,500$ $= \text{R}2\,137,50$ $\text{Taxable income} = \text{R}28\,500 - \text{R}2\,137,50$ $= \text{R}26\,362,50$ OR $\text{Taxable income} = 92,5\% \times 28\,500$ $= \text{R}26\,362,50$	F L2
2.4	From 1.3 $\text{Annual taxable income} = 26\,362,50 \times 12$ $= \text{R}316\,350$	F L2

	Tax bracket number 3	
2.5	$\text{Tax} = 63\,853 + 31\% (316\,350 - 305\,850)$ $= 63\,853 + 0,31 \times 10\,500$ $= 63\,853 + 3\,255$ $= R67\,108$ $\text{Tax with rebate} = 67\,108 - 14\,220 - 7\,794$ $= R45\,094$	F L3
2.6	FROM 1.5 Monthly tax (10 years younger) $R67\,108 - 14\,220$ $R52\,888 \div 12$ $R4\,407,33$ Her statement is invalid.	F L 4
2.7	$\text{MTC} = 310 + 310 + 209 + 209$ $= R1038$	F L2
2.8	$\text{Annual taxable income} = R45\,980,17 \times 12$ $= R551\,762,04$ $\text{Tax} = 100\,263 + 36\% (551\,762,04 - 423\,300)$ $= 100\,263 + 0,36 \times 128\,462,04$ $= 100\,263 + 46\,246,33$ $= R146\,509,33$ $\text{Tax with rebate} = 146\,509,33 - 14\,220$ $= 132\,289,33$ $\text{Monthly tax} = 132\,289,33 \div 12$ $= R11\,024,11$	F L3
	TOTAL	[30]
Ques	Solution	Topic/Level
3.1	Government Employees Pension Fund	F L1
3.2	$\text{Annual Gross} = R36\,188 \times 12$ $= R434\,256$	F L1
3.3	$\text{Pension Fund} = 7,5\% \times 434\,256$ $= R32\,569,20$	F L2
3.4	$\text{Annual taxable income} = 434\,256 - 32\,569,20$ $= R401\,686,80$	F L1
3.5.1	One rebate { Primary rebate }	F L1
3.5.2	$\text{Annual Tax} = 70\,532 + 31\% \text{ of the taxable income above } 337\,800$ $= 70\,532 + 0,31 \{ 401\,686,80 - 337\,800 \}$ $= 70\,532 + 0,31 \times 63\,886,80$ $= 70\,532 + 19\,804,91$ $= R\,90\,339,91$ $\text{Tax with rebate} = 90\,339,91 - 15\,714$ $= R74\,622,91$ $\text{Monthly tax} = 74\,622,91 \div 12$	F L3

	= R6 218,58	
3.5.3	USE ANNUAL TAX FROM 1.5.2 Tax with rebate (1 year older) = 90 339,91 – 15 714 – 8 613 = R66 009,91 Monthly tax = 66 009,91 ÷ 12 = R5 500,83 Difference = R6 218,58 – R5 500,83 = R718,05 His statement is CORRECT	F L4
3.5.4	New salary = 107% x 36 188 = R38 721,16 Monthly taxable income = 38 721,16 – 7,5 % x 38 721,16 = 38 721,16 - 2 904,09 = R35 817,07 OR New salary = 7% x 36 188 = R2 533,16 + 36 188 = R38 721,16 Monthly taxable income = 92,5% x 38 721,16 = R35 817,07	F L2

☐ **Tariff Systems**

Q1	SOLUTION	TARIFFS	Levels
1.1.1	An employee is somebody who has been appointed to do work and is paid a salary		L1
1.1.2	2022 – 1985 = 37 years		L1
1.1.3	Area Manager		L1
1.1.4	2022 -2015 =7 years		L1
1.1.5a	R27 000 + R5 700 + R2 200 = R34 900		L2
1.1.5b	R2840,52 + R148,72 + (0.075 × R27 000) + R4 376.59 = R9 390,83		L2
1.1.6	R5 700 : R27 000 19 : 90		L2
1.1.7	$\% = \frac{9390.82}{34900} \times 100\%$ $= 26.91\%$ The claim is not valid		L4
1.1.8	(34 900 × 12) + (0.95 × 27 000) 418 800 + 26 650 444 450		L3
Q2			

2.1.1	Miss T. Tenza	L1
2.1.2	4	L1
2.1.3	Prestige Plus current account	L1
2.1.4	A debit is an amount of money paid out of the account	L1
2.1.5	$582.14 + 25\,695.98 + 391.07$ $= 26\,669.19$	L2
2.1.6	$16 - 9 + 1 = 8$ days	L2
2.1.7	$100 + (6705.48 - 6204.38)$ $(100 + 501.10) \div 1.15$ 435,74	L3
2.1.8	$\% = \frac{20 + 2400 + 2000 + 1600}{5569.75 + 4168.79} \times 100\%$ $= 61.812$ $= 62\%$	L3
2.1.9	Yes it is a wise idea. To keep details confidential and avoid fraudulent activities	L4
Activity 3 [25]		
QUE	SOLUTION	
3.1.	Pre-paid- buy the phone in full before using it. Contract-taken from service provider and pay for a specific period.	(2) L4
3.2.	Range = $120 - 100$ $= 20$	(3) L1
3.3.	$24 \div 12$ $= 2$ years	(3) L2
3.4.	Deal A = $R300 \times 24 + (R2.50 \times (3,5 \text{ hours} \times 60\text{min}) - 100 \text{ min}) \times 24$ $= R7200 + R2,50 \times 110 \times 24$ $= R7200 + R6600$ $= R13\,800$ Deal B = $R400 \times 24 + R1,50 \times (3,5 \text{ hours} \times 60 - 120) \times 24$ $= R9\,600 + R1,50 \times (210 - 12) \times 24$ $= R9600 + R3\,240$	

	$= R12\ 840$ Therefore deal 2 out to the cheapest option	(8)	L3
3,5	Graph	(4)	L3
3.6	Deal A	(2)	L1
3.7.	$P(\text{deal with more minutes}) = \frac{1}{2} \times 100\%$ $= 50\%$	(3)	L2

☐ Income Expenditure, Profit/Loss

ACTIVITY 1

QUESTION 1 : BREAK-EVEN

QUES NO.	SOLUTIONS						Le vel	Marks
1.1.1. (a)	Table 2: The cost of hiring the Stanger Town Hall						L3	(3)
	Number of tickets sold (<i>n</i>)	0	50	100	B	200		
	Cost (<i>C</i>) in rand	3 000	7 500	12 000	15 600	21 000		
	Cost = R3000 + <i>n</i> x R 90							
(b)	Cost = R3000 + <i>n</i> x R 90 R15 600 = R3000 + B x R90 R15 600 – R3000 = <i>n</i> x R90 $\frac{12\ 600}{90} = B$ B = 140						L3	(3)
(c)								

	Income and Expenses Income (4) Cost																								
1.1.2.	<table><tr><td colspan="6">Table 1: The cost of hiring the Salt Rock Conference Centre</td></tr><tr><td>Number of tickets sold (<i>n</i>)</td><td>0</td><td>50</td><td>100</td><td>160</td><td>200</td></tr><tr><td>Cost (<i>C</i>) in rand</td><td>0</td><td>6 000</td><td>12 000</td><td>A</td><td>24 000</td></tr></table>					Table 1: The cost of hiring the Salt Rock Conference Centre						Number of tickets sold (<i>n</i>)	0	50	100	160	200	Cost (<i>C</i>) in rand	0	6 000	12 000	A	24 000		
Table 1: The cost of hiring the Salt Rock Conference Centre																									
Number of tickets sold (<i>n</i>)	0	50	100	160	200																				
Cost (<i>C</i>) in rand	0	6 000	12 000	A	24 000																				
	A = R120 x 160 = R19 200					L2	(2)																		
1.1.3																									
(a)	R21 000					L1	(2)																		
(b)	160 tickets					L1	(2)																		
1.1.4.	I = 150 x n = 150 x 150 = 22500 D = 22500					L2	(2)																		
1.1.5.	Number of tickets = 100					L1	(2)																		

1.1.6.	Salt Rock Conference Centre : Stanger Town Hall 24 000 : 21 000 8 : 7	L2	(2)
1.1.7.			
(a)	Therefore the number of tickets sold = 50	L1	(2)
(b)	Break-Even point	L1	(2)
(c)	Profit = Income – Cost = R 30 000 – R 21 000 = R 9 000	L3	(2)
			[28]

QUESTION 2 BUDGET

		Level	Marks
2.1.1.	Basic Education	L1	(2)
2.1.2.	One thousand five hundred and ninety-seven trillion and one million	L1	(2)
2.1.3.	A= 261292 + 201377 + 210 814 + 80 856 + 227 995 + 210170 + 72462 +27923 + 193 548 = 1486397 000 000 or 1486397 million	L2	(2)
2.1.4.	Basic education : Post School Education = 22649 : 68952 = $\frac{22649}{22649} : \frac{68952}{22649}$ = 1: 3,044	L2	(2)
2.1.5.	Total General public services = 14340 + 43943 + 12412 = 70 695	L1	(2)
2.1.6.	Percentage (Economic Affairs) = $\frac{201658}{1298923} \times 100$ =15.53%	L2	(3)
2.1.7.	Increase= (1597 001 – 1298923) million = 298078 million	L1	(3)
2.1.8.	- The enrolment has increased at school - Due to inflation - Learner teacher ratio has changed	L1	(2)
2.1.9.	$Percentage\ Increase = \frac{New\ Value - Old\ Value}{Old\ Value} \times 100\%$		

	(Education) $= \frac{280139-261292}{261292} \times 100$ $= 7,21\%$ $\text{Percentage Increase} = \frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \times 100\%$ (Health) $= \frac{217131-201337}{201337} \times 100$ $= 7,84\%$ His statement is INVALID.	L4	(5)
2.1.10.	Deficit/Surplus = Income – Expenses $= 974\,659\,000\,000 - 159\,700\,100\,000$ $= -622\,342\,000\,000$ The National Budget has a deficit.	L3	(4)
		TOTAL	: 27

Ques	Solution	MARKS	Level
	<i>(Provide all the possible alternatives)</i>		
1.1.1	Total Cost = R18 + R100 + R10 = R128	(2)	Finance/L1
1.1.2	Revenue = R3 x number of units sold R=R3 x n	(2)	L2
1.1.3	No. of units sold= 45 + 35 = 90 units On Wednesday she should order a new 5kg bag of cakes	(4)	L1 and L4
1.1.4	Break-even refers to the income (revenue) that must be generated to cover all the expenses Expenses = Incomes R128 = R3 x n $\frac{128}{3} = \frac{3n}{3}$ 42,66 = n 43 =n	(5)	L1 and L2
1.1.5	Percentage change= $\frac{\text{new price}-\text{old price}}{\text{old price}} \times 100$ $= \frac{135-105}{105} \times 100$ $= 28,57\%$	(3)	L2
1.2.1	Different venue costs	(2)	L1
1.2.2	Labelling (20; 1 000)	(3)	L2 and L4
1.2.3	Their fee structure comprises of both fixed and variable cost components.	(2)	L3
1.2.4	Invalid claim because venue A is greater R2 000 and venue B is less than R2 000.	(3)	L4
TOTAL		[26]	

ACTIVITY 2

QUESTION 1 [26 MARKS] - COST AND SELLING PRICE

Ques	Solution	MARKS	Level
2.1.1	A financial gain, especially the difference between the amounts earned and amount spent buying/producing/operating something. Profit = Selling Price – Cost Price = \$2 354 - \$1 824 = \$530	(4)	L1 and L2
2.1.2	\$530 x 16.53 = R8 760. 90	(2)	L2
2.1.3	\$1 824 x $\frac{100}{105}$ = \$1 737.14 \$1 824 - \$1 737.14 = \$86.86	(3)	L3
2.1.4	Percentage gain = $\frac{\text{new price} - \text{old price}}{\text{old price}} \times 100$ = $\frac{\$2\,354 - \$1\,824}{\$1\,824} \times 100$ = 29.06% = 30%	(3)	L2
2.1.5	2020: R21 000 2021: R27 900 2022: R 28 500	(3)	L4
2.1.6	Percentage change(2020 to 2021) = $\frac{\text{new price} - \text{old price}}{\text{old price}} \times 100$ = $\frac{R27\,900 - R21\,000}{R21\,000} \times 100$ = 32.86% Percentage change (2021 to 2022) = $\frac{R28\,500 - R27\,900}{R27\,900} \times 100$ = 2.15%	(3)	L2
2.1.7	An upward trend in the gold price can be expected enough the growth is small at the beginning of 2022 is minimal.	(2)	L4
2.1.8	From the graph in the beginning of 2022, the gold price is: Gold price = $\frac{\$28\,500}{16.53}$ = R1 724.14 Valid, because it will cost less to buy gold than the Zimbabwean	(3)	L1
	TOTAL	[26]	

□ **Cost Price and Selling Price**

Ques	Solution		Topic/Level
	(Provide all the possible alternatives)		Cost and Selling price
1.1	Total Cost = R18 + R100 + R10 = R128	(2)	Finance/L1
1.2	Revenue = R3 x number of units sold R=R3 x n	(2)	L2
1.3	No. of units sold= 45 + 35 = 90 units On Wednesday she should order a new 5kg bag of cakes	(4)	L1 and L4
1.4	Break-even refers to the income (revenue) that must be generated to cover all the expenses Expenses = Incomes R128 = R3 x n $\frac{128}{3} = \frac{3n}{3}$ 42,66 = n 43 =n	(5)	L1 and L2
1.5	Percentage change= $\frac{\text{new price}-\text{old price}}{\text{old price}} \times 100$ $= \frac{135-105}{105} \times 100$ = 28, 57%	(3)	L2
1.2.1	Different venue costs	(2)	L1
1.2.2	Labelling (45; 17 250)	(3)	L2 and L4
1.2.3	Their fee structure comprises of both fixed and variable cost components.	(2)	L3
1.2.4	Venue B is the cheapest option	(2)	L3
	TOTAL	[25]	

QUESTION 2 [_25_] MARKS]

Ques	Solution		Topic/Level
	(Provide all the possible alternatives)		Finance: Cost and Selling price
2.1.1	A financial gain, especially the difference between the amounts earned and amount spent buying/producing/operating something. Profit = Selling Price – Cost Price = \$2 354 - \$1 824 =\$530	(4)	L1 and L2
2.1.2	\$530 x 16.53 = R8 760. 90	(2)	L2
2.1.3	$\$1\,824 \times \frac{100}{105} = \$1\,737.14$ $\$1\,824 - \$1\,737.14 = \$86.86$	(3)	L3
2.1.4	Percentage gain = $\frac{\text{new price}-\text{old price}}{\text{old price}} \times 100$ $= \frac{\$2\,354-\$1\,824}{\$1\,824} \times 100$ = 29.06% =30%	(3)	L2
2.1.5	2020: R21 000	(3)	L4

	2021: R27 900 2022: R 29 900		
2.1.6	Percentage change(2020 to 2021) $= \frac{\text{new price} - \text{old price}}{\text{old price}} \times 100$ $= \frac{R27\,900 - R21\,000}{R21\,000} \times 100$ $= 32.86\%$ Percentage change (2021 to 2022) $= \frac{R29\,900 - R27\,900}{R27\,900} \times 100$ $= 7.16\%$	(3)	L2
2.1.7	An upward trend in the gold price can be expected.	(2)	L4
	TOTAL	[25]	

☐ **Interest and Banking**

ACTIVITY 1			
1.1.1	February	(2)	F1
1.1.2	$\text{bank fees} = (R1.90 \times 5) + (R5.10 \times 2) + R16.50$ $= R36.20$ OR $\text{bank fees} = 1.90 + 1.90 + 1.90 + 1.90 + 1.90 + 5.10 + 5.10 + 16.50$ $= R36.20$	(2)	F1
1.1.3	$\text{the value of A} = R4\,426.09 - R3300 - R16.50$ $= R1109.59$	(2)	F1
1.1.4	Date 16/02/2019 Amount= -R28,95	(2)	F1
1.1.5	$\text{deposited amount} = R831.40 - (-R28.95)$ $= R860.35$	(3)	F2
1.1.6	$\text{percentage of interest} = \frac{R6.45}{R11375.45} \times 100$ $= 0.0567\%$	(3)	F2
1.1.7	$\text{bank charge for R3300} = R12 + \frac{0.9}{100} \times R3300$ $= 12 + 29.70$ $= R41.70$ His claim is invalid: he was undercharged	(5)	F3
1.1.8	Total bank charges with Limited Bank = R36,20 $\text{bank charges for ABK} = (5 \times R1.65) + (2 \times R2.50) + R6.70$ $= R19.95$ $\text{withdrawal} = R2.50 + \left(R1.10 \times \frac{R3300}{100} \right)$ $= R2.50 + R1.10 \times 33$	(7)	F4

	$=R38.80$ Total = R19,95 + R38.80 $=R58,75$ He must not change his bank		
ACTIVITY 2			
1.2.1	Is the method of payment where a customer is allowed to pay for the goods on monthly basis while using them? Is the agreement made by the store and the client to take goods on credit and pay on monthly basis	(2)	F1
1.2.2	$deposit = \frac{15}{100} \times R6\,499$ $= R974,85$	(2)	F1
1.2.3	$discount\ percentage = \frac{R6499 - R7139,99}{R7139,99} \times 100$ $= \frac{-R640,99}{R7139,99} \times 100$ $= -8,97746\%$	(3)	F2
1.2.4	Remaining amount = R6499 – R974,85 $= R\,5\,524,15$ $interest = \frac{18,5}{100} \times R5524,15$ $= R1021,97$ TOTAL = R5524,15 + (3 × R1021,97) $= R8590,06$	(5)	F3
1.2.5	$savings = R8590,06 - R6499$ $= R2091,06$	(2)	F2
1.3.1	Interest is the amount of money added on the investment or charged on the money borrowed Interest rate is the percentage used to calculate the added or charged.	(2)	F1
1.3.2	$investment = 24 \times R800$ $= R19\,200$	(3)	F2
1.3.3	Annual interest rate = 12,5% $half\ year\ rate = \frac{12,5\%}{2}$ $= 6,25\%$ $first\ year = R19200 \times \frac{112,5}{100}$ $= R22\,275$ $second\ year = R22\,275 \times \frac{112,5}{100}$ $= R25\,059.375$ $half\ yearly = R25\,059,375 \times \frac{112,5}{100}$ $= R28\,191,79688$ $= R28\,191,80$	(6)	F3
1.3.4	$interest = R28\,191,80 - R19\,200$ $interest = R8991,80$	(2)	F1

		27 marks
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	QUESTION 1 (25 MARKS)	TL
1.1.1	Opening balance is the amount Solly had in his account as a closing balance from previous month or January.	L1
1.1.2	Cost of calls = R289,32 - R85,00 = R204,32	L1
1.1.3	Total ATM withdrawal = R1 000,00 + R800,00 = R1 800,00	L2
1.1.4	Car insurance= R4 452,96 – R3 800,96 = R652,00	L2
1.1.5	Closing balance on 21 Feb = R2 227,96 – R5,59= R2 222,37	L1
1.1.6	Total banking charges = R1,50+(R6,00x5)+R5,59+R8,20=R45,29	L1
1.2.1	Transaction fee = R2,50 +(0,95% x R325) = R5,59	L2
1.2.2	$R325 \div R100 = 3,25 \approx 4$ $= R0,90 \times 4 = R3,60$ $\therefore \text{He will save} = R5,59 - R3,60 = R1,99$	L3
1.3.	ATM withdrawal- 06/02/2022 Fee = R2,50 +(R1,10 X 9)= R12,40 ATM withdrawal – 10/02/2022 Fee = R2,50 + (R1,10 X 8)= R11,30 Debit order = R5,00 X 2= R10,00 Cash withdrawal at branch Fee =R2,80+ 0,90% X R325,00= R5,73 Total ABDA bank fees = R12,40 + R11,30 + R10,00 + R5,00+ R2,30+ R5,73+ R6,70= R53,43 NEDSAVE bank total fees = R45,29 $\therefore$ ABDA financial advisor's claim is INVALID .	L4

□ Exchange Rates and Inflation

INFLATION AND EXCHANGE RATE		
QUESTION	ANSWERS	
1.1		
1.1.1	It is the rate at which you can buy a countries currency with another countries currency.✓✓	L1
1.1.2	a) \$ ✓ b) € ✓ c) ¥ ✓ d) £ ✓	L1
1.1.3	Yen ✓✓ OR Indian Rupee	L4
1.1.4	Germany OR Spain ✓✓ Any relevant answer.	L1
1.1.5	$= \frac{1}{16.4546633} \checkmark \checkmark$ $= 0.060773$	L2
1.1.6	$= R15\ 000 \times 0.049792 \checkmark$ $= £\ 74.688 \checkmark$	L2
1.2		
1.2.1	R28.99 - R22.99 =R6	L2
1.2.2	$= \frac{R6}{R22.99} \times 100$ $= 26.098\%$	L3
1.2.3	R1 = \$0.060773.✓✓	L2
1.3	The price of goods and service increase.(this cause increase in imports and decrease in exports).✓	L4
1.4	4.827048 Indian Rupees : 8.080764 Japanese Yen✓✓	L2
	TOTAL=	25 MARKS

INFLATION AND EXCHANGE RATE		
QUESTION	ANSWERS	LEVELS
1.1		
1.1.1	It is the general increase in the prices of goods and services.✓✓	L1
1.1.2	September and October✓✓ OR January and February✓✓ OR March and April✓✓	L1
1.1.3	May ✓✓	L1

1.1.4	6.5%✓ - 5.9%✓ = 0.6%✓	L2
1.1.5	May 2022= R1500 + ($\frac{6.5}{100} \times R1500$) = R1500 + R97.50✓ = R1597.50✓	L2
1.2		
1.2.1	May = R18 365 000 + ($\frac{5.9}{100} \times R18 365 000$) = R19 448 535 = R19 448 535 - R18 365 000✓ = R1 083 000 $\therefore \frac{R1\,083\,000}{R18\,365\,000} \times 100$ ✓ = 5.89% He is incorrect✓	L4
1.2.2	$= \frac{1}{3} \times ZAR18\,365\,000$ = ZAR6 121 666.67	L3
1.2.3	\$1=ZAR16.46 = ZAR18 365 000 ÷ ZAR16.46 = \$1 115 735.12 = \$1 115 735	L3
1.2.4	South African Rand	L1
1.3	5%	L2
TOTAL=		25 MARKS

Data Handling

□ Developing Questions

ACTIVITY 1 QUESTION 1

ACTIVITY 1 QUESTION 1														
1.1	Survey / Interview	DH L 1												
1.2	Population is all the people present in South Africa while the Census were completed.	DH L 1												
1.3	To plan the future spend of the Governments resources.	DH L 1												
1.4	<table><tr><th>P-01 DATE OF BIRTH</th><th>P-02 RELATIONSHIP</th><th>P-03 MARITAL STATUS</th><th>P-04 SPOUSE OR PARTNER</th><th>P-05 POPULATION GROUP</th><th>P-06 LANGUAGE</th></tr><tr><td>2 1 0 8 1 9 6 4</td><td>0 1</td><td>1</td><td>9 8</td><td>3</td><td>First 1 3 Second 0 2</td></tr></table>	P-01 DATE OF BIRTH	P-02 RELATIONSHIP	P-03 MARITAL STATUS	P-04 SPOUSE OR PARTNER	P-05 POPULATION GROUP	P-06 LANGUAGE	2 1 0 8 1 9 6 4	0 1	1	9 8	3	First 1 3 Second 0 2	DH L 2
P-01 DATE OF BIRTH	P-02 RELATIONSHIP	P-03 MARITAL STATUS	P-04 SPOUSE OR PARTNER	P-05 POPULATION GROUP	P-06 LANGUAGE									
2 1 0 8 1 9 6 4	0 1	1	9 8	3	First 1 3 Second 0 2									
1.5	Re Previous Chinese citizen - Country of Birth - Year moved to South Africa - SA Citizen Re Renting - Usual residence - Province of Usual residence - Municipality of usual residence Any related answers	DH L 3												
1.6	If the child is 5 years old two boxes could be ticked. Change one of the 5's to an appropriate value.	DH L 4												
1.7	A sample will not give a true reflection of the socio-economic dynamics in South Africa and can lead to inefficient planning.	DH L 4												
1.8	$P(\text{IsiZulu}) = \frac{1}{13}$	DH L 2												

ACTIVITY 2 QUESTION 1

ACTIVITY 2 QUESTION 1								
1.1		MALE			FEMALE			DH L 3
		13 – 14	15 – 16	17 – 18	13 – 14	15 – 16	17 – 18	
	None	1	2				1	
	A little	2		1	1	1		
	A lot	3	1		2	1		
	An unbearable amount		1		1	1	1	
1.2	18, 17, 16, 15, 14, 13							DH L 1
1.3	Numerical data is quantitative.							DH L 1
1.4	The sample size is 20.							DH

		L 1
1.5	Male total = 1+2+3+2+1+1+1 = 11 Female total = 2+1+1+2+1+1+1 = 9 Male : Female = 11:9	D L 2
1.6	% Boys that feel pressure = $\frac{5}{11} \times 100\%$ = 45,4545..% = 45,5% % Girls that feel pressure = $\frac{4}{9} \times 100\%$ = 44,44...% = 44,4 % The data seems to show that boys feel the pressure more than girls.	D L 2
1.7	Two age groups is in one interval.	D L 4
1.8	It will be unclear to the respondents of how much is “a lot” or “a little”	D L 4

ACTIVITY 3 QUESTION 1		
1.1.1	23+41+42+50+51+54+55+56+57 = 479 $\frac{479}{10} = 47,9$	DH L3
1.1.2	60+61+65+66+66+67+68+69 = 522 65 x 9 = 585 A = 585 – 522 = 63	DH L4
1.1.3	12 A 23; 41; 42; 50; 50; 51; 54; 55; 56; 57 $\frac{50+51}{2}$ =50,5 Median =50,5 12 B - 60; 61; 63; 65; 66; 66; 67; 68; 69 Median = 66	DH L3 L2
1.1.4	Mode for 12B = 66	DH L1
1.2	Q3 = 55	DH L1
1.3	55 – Q1 = 13 55 - 13 = Q1 Q1 = 42	DH L4
1.4.1	Q1 = 62 Q2 = 66 Q3 = 67,5	DH L1
1.4.2	12 A The range of the 12 A class marks are higher than the range of the 12B class marks	DH L 3

ACTIVITY 3 QUESTION 2		
2.1	Siyanda	DH L1
2.2	Gender, describing/separate the gender with consist of words.	DH L1
2.3	Continuous data, it is a measurable data.	DH L2
2.4	$P(>16) = \frac{2}{10} \times 100\%$ $= 20 \%$	DH L2
2.5	1,5 m	DH L2
2.6	Range = A – 13 6 = A – 13 A – 13 = 6 A = 6 + 13 A = 19	DH L4
2.7	$19 + 15 + 13 + 17 + 18 + 17 + 16 + 14 + 15 + 15 = 159$ $\frac{159}{10}$ $= 15,9$	DH L3
2.8	19; 18; 17; 17; 16; 15; 15; 15; 14; 13	DH L2
2.9	1,4; 1,4; 1,5; 1,5; 1,5; 1,5; 1,6; 1,6; 1,7; 1,7 Median = $\frac{1,5+1,5}{2}$ $= 1,5$	DH L3
2.10	$10 \times \frac{75}{100}$ $= 7,5$ $= 8$ Mr Dimba is correct cause the first 8 learners are less than 17 years old	DH L4

ACTIVITY 3 QUESTION 3		
3.1	Number of voting percentages that appears the most from the sample polls.	DH L1
3.2	65%	DH L2
3.3	13 polls	DH L1
3.4	Range = 88% – 25% $= 63\%$	DH L2
3.5	28 polls	DH L1

3.6	Mean = $\frac{88+35+41+\dots\dots\dots 52+85}{28}$ $= \frac{1752}{28}$ $= 62,5714$ $= 63\%$	DH L2
3.7	Median = $\frac{65\% + 65\%}{2}$ $= 65\%$	
ACTIVITY 3 QUESTION 4		
4.1	45	
4.2	Grade 12B, a learner in this class obtained the highest mark of 75, compared to the top marks of 60 and 65 in the other classes. (Any valid reason)	DH TL3
4.3	All learners obtained 30% or more. (Any valid reason referring to the spread of data)	DH L4
4.4	Grade 12C, all learners have passed the subject. (Any valid reason)	DH L3
4.5	IQR = $58 - 35$ $= 23$	DH L3

ACTIVITY 3 QUESTION 5		
5.1	Minimum = 11 (accept 12) Maximum = 33	DH L1
5.2	Mean = $\frac{39+38+27+22+20+17+\dots\dots\dots+10}{10}$ $= 203 \div 10$ $= 20,3$ $= 21$ (accept 18 - 22)	DH L2
5.3	Range = $41 - 7$ $= 34$	DH L2
5.4	11, 14, 16, 17, 18, 20, 22, 22, 23, 33 Median = $\frac{18 + 20}{2}$ $= 19$ bronze medals	DH L2
5.5	10 gold medals	DH L1
ACTIVITY 3 QUESTION 6		
6.1	3,6 kg	DH L1
6.2	37,5 inches	DH L1

6.3.1	75 th percentile, 75% of the boys same age they weigh less than 15kg. OR 25% of the boys same age weigh more than 15kg.	DH L4
6.3.2	90 th percentile, 90% of the boys same age have length less than 92cm. OR 10% of the boys same age have length more than 92cm.	DH L4
6.4.	IQR = 13 – 11.2 = 1.8 kg	DH TL3

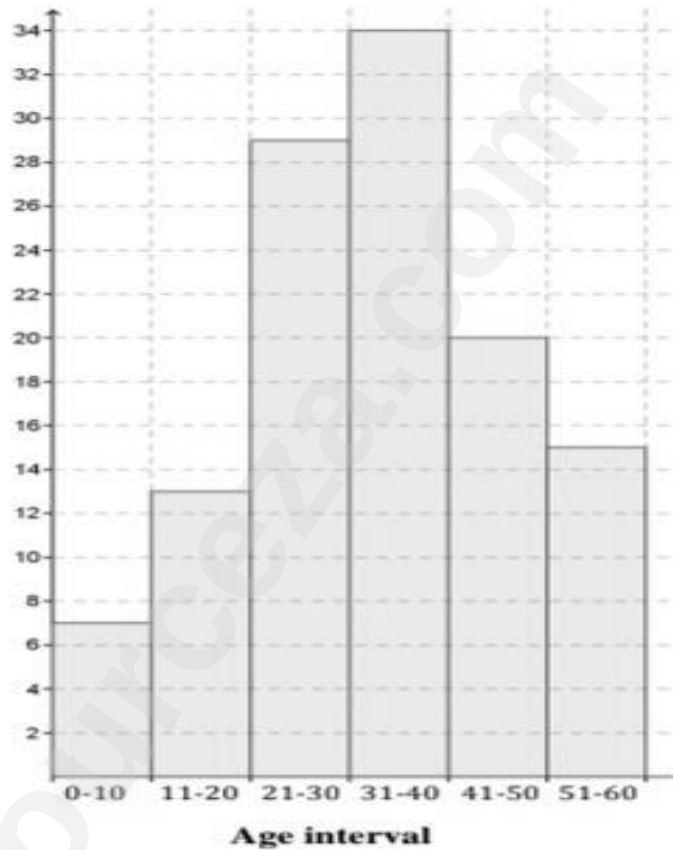
ACTIVITY 4 QUESTION 1														
1.1	Horizontal compound bar graph/ Compound bar graph	DH L1												
1.2	Drivers talking on a cellphone.	DH L1												
1.3	Scatter plot graph													
1.4	Graph depicting total number of SA road fatalities <table><thead><tr><th>Years</th><th>Total number of road fatalities</th></tr></thead><tbody><tr><td>2012</td><td>13,500</td></tr><tr><td>2013</td><td>11,800</td></tr><tr><td>2014</td><td>12,700</td></tr><tr><td>2015</td><td>12,900</td></tr><tr><td>2016</td><td>14,000</td></tr></tbody></table>	Years	Total number of road fatalities	2012	13,500	2013	11,800	2014	12,700	2015	12,900	2016	14,000	DH L3
Years	Total number of road fatalities													
2012	13,500													
2013	11,800													
2014	12,700													
2015	12,900													
2016	14,000													
1.5.1	IsiNdebele	DH L1												
1.5.2	% for isiZulu = $100 - (16 + 1 + 8 + 13 + 4 + 1 + 10 + 8 + 7 + 9)$ = 22% $\therefore \frac{22}{100} \times 12\,780\,000$ = 2 811 600 Claim is valid	DH L4												
1.5.3	English and Setswana	DH L1												
1.5.4	combined % = $13 + 9$ = 21% $\therefore \frac{21}{100} \times 12\,780\,000$	DH L2												

= 2 683 800

ACTIVITY 4 QUESTION 2

DH
L3

Number of people

DH
L4DH
L2DH
L4DH
L1DH
L2DH
L1DH
L2DH
L2

DH

	Boss – Graph A because there is not much change in the bars	L4
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☐ Collecting Data

QUESTION 1 [_27_] MARKS]

Ques	Solution	Topic/Level
1.1.1.	Number of percentage that appears the most in the districts.	DH TL1
1.1.2.	65	DH TL2
1.1.3.	13	DH TL1
1.1.4.	Range = $88 - 25$ $= 63$	DH TL2
1.1.5.	28	DH TL1
1.1.6.	Mean = $\frac{88+35+41+\dots\dots\dots 52+85}{28}$ $= 1662 \div 28$ $= 59,3$ $= 59$	DH TL2
1.1.7.	Median = $\frac{65 + 65}{2}$ $= 65$	
1.2.1.	45	
1.2.2.	Grade 12B, the learner obtains more than all classes. (any valid reason)	DH TL3
1.2.3.	All learners obtained 30% or more.	DH

	(any valid reason)	TL4
1.2.4.	Grade 12C, all learners have passed the subject. (any valid reason)	DH TL3
1.2.5.	$IQR = 58 - 35$ $= 23$	DH TL3
	TOTAL	[27]

QUESTION 2 [_ 25_MARKS]

Quest	Solution	Topic/Level
2.1.1.	Minimum = 20 Maximum = 33	DH TL1
2.1.2.	Mean = $\frac{39+38+27+22+20+17+\dots+10}{10}$ $= 203 \div 10$ $= 20,3$	DH TL2
2.1.3.	Range = $41 - 10$ $= 31$	DH TL2
2.1.4.	Median = $\frac{18 + 20}{2}$ $= 19$	DH TL2
2.1.5.	10	DH TL1
2.2.1.	2,6	DH TL1
2.2.2.	90cm	DH TL1

2.2.3.	75 th percentile, 75% of the boys same age they weigh less than 15kg.	DH
(a)	OR 25% of the boys same age weigh more than 15kg.	TL4
(b)	90 th percentile, 90% of the boys same age have length less than 92cm.	DH
	OR 10% of the boys same age have length more than 92cm.	TL4
2.2.4.	IQR = 13 – 11.2 = 1.8 kg	DH TL3
	TOTAL	[25]

QUESTION 2 [23 MARKS]

Ques	Solution	Marks	Topic/Level
2.1	$4,9 \times 100 = 490\text{cm}$	2	1
2.2	$900 \div 1000 = 0,9\text{m}$	2	1
2.3.1	17:00	2	1
2.3.2	40 min + 10 min = 50 min 17:00 + 50 min : 17:50	3	2
2.4	$C = 2 \times \pi \times r$ $= 2 \times 3,142 \times 4,9\text{m}$ $= 30,576\text{m}$ $C \div 2$ $= 30,576 \div 2$ $= 15,288\text{m}$ $P = 15,288\text{m} + (2 \times r)$ $= 15,288\text{m} + (2 \times 4,9\text{m})$ $= 25,088\text{m}$ $= 25,08\text{m}$	3	2
2.5	$30,5\text{m} \div 3 = 10,166\text{m}$ $= 10,17\text{m}$	2	2
2.6	Perimeter of court = $30,5\text{m} + 30,5\text{m} + 15,25\text{m} + 15,25\text{m}$ $= 91,5\text{m}$ Min dist during laps = $5 \times 91,5\text{m}$ $= 457,5\text{m}$ Sprint dist = $30,5\text{m} \times 2$ $= 61\text{m}$ Min tot dist covered = $457,5\text{m} + 61\text{m}$ $= 518,5\text{m}$ Convert to km : $518,5\text{m} \div 1000$ $= 0,5185\text{ km}$	5	3

	=0, 52 km		
2.7	Claim → 5:00 was latest time to leave school Time = distance ÷ speed $= 220\text{km} \div 80 \text{ km/h}$ $= 2,75 \text{ hours}$ Min = 0,75 x 60 $= 45 \text{ minutes}$ Tot time for trip = 2 hours and 45 minutes Latest time to leave Welabasha : $7:00 - 2:45 = 4:15$ So the coaches claim is incorrect. The team must have left by 4:15 to be on time at 7:00.	6	4
	TOTAL	[25]	

☐ Length, Distance and Time

MARKING GUIDELINES:		
TOPIC: MEASUREMENT – LENGTH, DISTANCE AND TIME		
ACTIVITY ONE: [25MARKS]		
1.1.	B	L1
1.2.	Metres	L1
2.1.1.	Perimeter refers to the distance around the soccer field/ or the boundary lines of the soccer field.	L1
2.1.2.	Length of soccer field: $1 \text{ yard} = 0,9144$ $130\text{yards} = 130 \times 0,9144$ $= 118,872\text{m}$	L2
2.1.3.	Circumference of the centre circle: $C=2\pi r$ $10\text{yds} = 10 \times 0,9144\text{m}$ $= 9,144\text{m}$ $C = 2 \times 3,142 \times 9,144$ $= 57,460896\text{m}$	L4
2.1.4.	Perimeter = $2(130 + 80)$ $= 2(210)$ $= 420 \times 0,9144$ $= 384,048\text{m} \div 200$ $= 1,92024/2\text{bags}$ Sports master is correct	L2
2.2.1.	$1000\text{m} = 1 \text{ km}$ $1 \text{ km} = 0,6215\text{miles}$	L1
2.2.2.	Distance covered: $5\,222,086 \times 1,609$ $= 8\,402,336374$ $= 8400\text{km}$	L2

2.2.3.	Perimeter of flag: $L: 5,5 \div 0,9144 = 5,0292\text{m}$ $B: 2,5 \div 0,9144 = 2,286\text{m}$ $P = 2 (L + B)$ $= 2 (5,0292 + 2,286)$ $= 2 (7,3152)$ $= 14,6304\text{metres}$ $= 14,6\text{m}$	L3
ACTIVITY TWO:[25 MARKS]		
1.1.1.	8 th February 2020	L1
1.1.2.	FULL MOON: Sunday MOONRISE : 5.37pm	L1
1.1.3.	DURATION: 11 : 54 - 05 : 38 = 06 : 16 06H16	L2
1.1.4.	TIME IN HOURS: 05:45 (45 ÷ 60 = 0,75) = 5,75HRS	L2
1.1.5.	6 th February 2020 -Thursday 08 : 40 - 02 : 41 07 : 100 (100 = 60min + 40 min) - 02 : 41 05 : 59 Statement is INCORRECT. It is less than 6 hours	L4
1.1.6.	9,7ft x 0,3048m $= 2,95656\text{m}$ $= 3\text{metres}$	L2
2.1.1.	Train number 67010	L1
2.1.2.	30 minutes past 5 in the afternoon	L1
2.1.3.	11:59 - 08:51 = 03hrs 08min $03:08 = 3,133333333\text{hrs} \quad (8 \div 60 = 0,133333333)$ Speed = Distance ÷ Time $= 78 \div 3,133333333$ $= 24,89361702\text{km/hr}$ $= 25\text{km/hr}$	L3

ACTIVITY TWO:[25 MARKS]		
1.1.1.	8 th February 2020	L1
1.1.2.	FULL MOON: Sunday MOONRISE : 5.37pm	L1
1.1.3.	DURATION: 11 : 54 - 05 : 38 = 06 : 16 06H16	L2
1.1.4.	TIME IN HOURS: 05:45 (45 ÷ 60 = 0,75) = 5,75HRS	L2
1.1.5.	6 th February 2020 -Thursday 08 : 40 - 02 : 41 08 : 100 (100 = 60min + 40 min) - 02 : 41 05 : 59 Statement is INCORRECT. It is less than 6 hours	L4
1.1.6.	9,7ft x 0,3048m = 2,95656m = 3metres	L2
2.1.1.	Train number 67010	L1
2.1.2.	30 minutes past 5 in the afternoon	L1
2.1.3.	11:59 - 08:51 = 03hrs 08min 03:08 = 3,133333333hrs (8÷60 = 0,133333333) Speed = Distance ÷ Ttime = 78 ÷ 3,133333333 = 24, 89361702km/hr = 25km/hr	L3

Question	Solution	Explanation
3.1	<u>1</u> = <u>3.280839895</u>	2MA Dividing by 3.280839895

	$3.280839895\checkmark$ $3.280839895\checkmark$ $0.3048\text{m} = 1\text{ft}$ $1\text{ft} = 0.3048\text{m}\checkmark$	1A Answer
3.2.1	Outer dimensions $L = 44 \times 0.3048\checkmark$ $= 13.4\text{m}\checkmark$ $W = 28 \times 0.3048$ $= 8.5\text{m}\checkmark$	1M Multiplying 1A Simplification 1A Correct width
3.2.2	Inner dimensions $L = 32 \times 0.3048$ $= 9.8\text{m}\checkmark$ $W = 16 \times 0.3048$ $= 4.9\text{m}\checkmark$	1A Correct length 1A Correct Width
3.3	$13.4 - 9.8\checkmark$ $= 3.6 \div 2\checkmark$ $= 1.8\text{m}\checkmark$ OR $8.5 - 4.9\checkmark$ $= 3.6 \div 2\checkmark$ $= 1.8\text{m}\checkmark$	1M Subtraction 1M Division by 2 1CA Answer
3.4	$\text{Outer} = 13.4 \times 8.5\checkmark$ $= 113.9\text{m}^2\checkmark$ $\text{Inner} = 9.8 \times 4.9\checkmark$ $= 48.02\text{m}^2\checkmark$ $\text{Area of deck} = 113.9 - 48.02\checkmark$ $= 65.88\text{m}^2\checkmark$	1MA Concept of Area 1S Simplification 1MA Multiplication 1A Simplification 1M Subtraction 1CA Answer NPR
3.5.1	$960\,400 \div 10\,000\checkmark\checkmark$ $= 96.04\text{m}^2\checkmark$	1M Dividing by correct conversion unit 1M Squaring conversion unit 1CA Answer
3.5.2	$\text{Height} = \frac{\text{Volume}}{L \times B}$	

	$H = 96.04 \checkmark \div (9.8 \times 4.9) \checkmark \checkmark$ $= 2m \checkmark$	1M Volume 1M Denominator 1CA Answer
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□ Surface Area

Answers	Mark	Level
1.1.1 Body Mass index	2	L1 M
1.1.2 2 to 20 years	2	L1 M
1.1.3 85 th to 95 th	2	L1 M
1.1.4 No, the above growth chart is strictly for boys	3	L4 M
1.1.5 It means 75% of boys in his age category weigh less than him and 25% of boys in his age category weigh more than him	2	L4 M
1.1.6 75 th	2	L2 M
1.1.7 17.2 kg/m ²	2	L2 M
1.1.8 (a) $BMI = \frac{80kg}{(1.86m)^2}$ $= 23.12 \text{ kg/m}^2$ Between 50 th and 75 th percentile Healthy weight (b) $BMI = \frac{\text{mass in (kg)}}{\text{height in (m}^2\text{)}}$ $21 = \frac{\text{mass}}{(1.65m)^2}$ Mass = 21×1.65^2 Mass = 57.17 kg	5 3	L4 M L3
1.2 a	2	L1
Question 2		
2.1.1 Volume of a cylinder = $\pi r^2 h$ $= 3.142 \times (0.4572m)^2 \times 1.8m$ $= 1.18... \times 60$ $= 70.93 \text{ m}^3$	4	L3 M

2.1.2 volume of 1 bale = 1.18 m^3 Surface area = $2\pi r \times (r + h)$ $= 2 \times 3.142 \times (0.4572\text{m}) \times (0.4572\text{m} + 1.8\text{m})$ $= 6.49\text{m}^2$ $\frac{1.18}{6.49} = 18.18\%$ Claim is valid	5	L4 M
2.2.1 Amount of 3d space available in a particular pan	2	L1 M
2.2.2 Volume of a cylinder = $\pi r^2 h$ $= 3.142 \times (13\text{cm})^2 \times 6\text{cm}$ $= 3185.988 \text{ cm}^3$	3	L3 M
2.2.3 volume = $l^2 \times h$ $3185.988 = l^2 \times 6 \text{ cm}$ $l^2 = 530.998$ $\sqrt{l^2} = \sqrt{530.998}$ $l = 23\text{cm}$	4	L3 M
2.2.4 1000 ml	2	L1 M
2.2.5 350 ml	2	L1 M
2.3.1 To cater for expansions and to prevent explosion during transportation	2	L4
		M
2.3.2 Volume is the 3d space available inside a container, capacity is oil a container can hold if it is full.	4	L1
		M
2.3.3 $0.4\text{m}^3 \times 1000^3 = 40\,000 \text{ cm}^3 \div 1000 = 400 \text{ litres}$ 1 cup = 250 ml Cup = $400 \div 250 \times 1$ Cup = 1.6	6	L3 M
2.3.4 Volume of a cylinder = $\pi r^2 h$ $2000 = 3.142 \times r^2 \times 25\text{cm}$ $r^2 = 25.46$ $r = \sqrt{25.46}$ $r = 5.05$	4	L3 M
2.3.5 $2000 \times \frac{80}{100} = 1600 \text{ cm}^3$ <i>Volume of a cylinder = $\pi r^2 h$</i> $1600 = 3.142 \times (5.05)^2 \times h$ $h = 19.967$ $h = 20$	6	L3 M

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Maps and Plans

☐ Scale

QUEST	SOLUTION	LEVEL
1.1.1	Saturday, 18 December 2021 (2)	1
1.1.2	10:00 – 8:15 = 1 hr 45 mins (3)	2
1.2.1	The top view of the MSC yacht owners' suite (2)	1
1.2.2	Total area = $98 \text{ m}^2 + 25 \text{ m}^2$ = 123 m^2 (2)	1
1.2.3	5 people (2)	1
1.2.4	Seaview (2)	1
1.3.1	One unit on the map is equal to one hundred thousand units in reality or actual ground (2)	1
1.3.2	1: 100 000 3.7cm: 370 000cm $370\,000\text{cm} \div 100\,000 = 3.7\text{km}$ Actual distance in meters = $2150\text{km} + 2150\text{km} + 3.7\text{km}$ = $4303.7\text{km} \times 1000$ = 4 303 700m (6)	3
1.3.3	- Keeps water of the deck - Pitching motions - Change in wind speed (2)	4
1.4.1	From the N14 in Magalisberg join the N3 drive until you reach Krugerdorp. Proceed until you pass Johannesburg. Continue on the N3 until you reach OR Tambo International Airport (3)	4

ACTIVITY 2: MARKING GUIDELINES

QUE	SOLUTION	T/L
1.1.1	C1	MP L1
1.1.2	R535 R40	MP L1
1.1.3	South West/ SW	MP

		L1
1.1.4	Lydenburg Dullstroom	MP L1
1.2		
1.2.1	• Travel from Malelane gate; • Drive past Pretoriuskop • Turn left at Skukuza • Pass Paul Kruger gate, Phabeni gate is at the end of the road	MP L2
1.2.2	$\text{Time} = \frac{127 \text{ km}}{25 \text{ km/h}}$ $= 5,08 \text{ hours}$ $= 0,08 \times 60$ $= 4,8 \text{ minutes}$ $= 5 \text{ hours } 5 \text{ minutes}$	MP L2
1.2.3	19mm : 30km <u>19mm</u> : <u>30 000 000mm</u> 19mm 19mm 1 : 1 578 947 OR 38mm : 60km <u>38mm</u> : <u>60 000 000mm</u> 38mm 38mm 1 : 1 578 947	MP L3
1.3	Distance = average speed $\times$ time 34 km = 85 km per hour $\times$ time Time = 0,4 hours = 24 minutes Khulekani left home at 24 minutes before 12:10 = 11:46 He did NOT leave at 11:40	MP L4

	OR Time diff. = 12:10 – 11:40 = 30 min = 0,5 hours Distance = 85 km/h × 0,5 h = 42,5 km more than 34 km Khulekani did NOT leave at 11:40 but a bit later	
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TOPIC: SCALES MARKING GUIDELINE		
QUESTION	SOLUTIONS	LEVELS
1.1		
1.1.1	Number/numerical scale	(2) L1
1.1.2	One represent distance on the plan and two hundred represent distance on the ground	(2) L1
1.1.3	= 2:2 1:1	(2) L1
1.1.4	decoration/design -natural light -allowing fresh air after cooking -Passive solar heating	(4) L4
1.1.5	L=7cm B=5.5cm 7cm x 200 =1400cm 5.5 x 200 =1100cm	(4) L2
1.2.1	Strip chart map	(2) L1
1.2.2	Measured distance= 1.8cm Actual distance= 1165km- 1107km = 58km Scale 1.8cm=58km 58km x 100 000=5 800 000cm Scale= 1 : 3 222 222	(5) L3
1.2.3	58+1386 =1444 km	(4) L2
	TOTAL =	25

☐ Scale and Plans

ACTIVITY 01 [25 MARKS]

QUE	SOLUTION	T/L
1.1		
1.1.1	At Buffs	MP L1
1.1.2	$= 39 - 27$ $= 12 \text{ km}$	MP L1
1.1.3	$45 \text{ minutes} \div 60 \text{ minutes}$ $= 0,75 \text{ hours}$ Time taken $= 8,75 \text{ h} - 5 \text{ h}$ $= 3,75 \text{ h}$ OR Time taken $= 08:45 - 05:00$ $= 03\text{h}45 \text{ minutes}$ $= 03\text{h} (45 \text{ minutes} \div 60 \text{ minutes})$ $= 3,75 \text{ h}$	MP L2
1.1.4	Distance = Average speed x time $21 \text{ km} = \text{speed} \times 3,75 \text{ hours}$ $\frac{21 \text{ km}}{3,75 \text{ hours}} = \frac{3,75 \text{ hours}}{3,75 \text{ hours}} \times \text{speed}$ $= 5,6 \text{ km/h}$	MP L3
1.1.5	Cut-off time is a time limit by which all participants must cross a demarcation/line to ensure they can finish the race before the event shuts down.	MP L2
1.1.6	- Increasing fitness levels - Meet new people	MP

	(accept any valid opinion)	L1
1.1.7	Half distance = $42,2 \text{ km} \div 2$ $= 21,1 \text{ km}$	MP L1
1.2		
1.2.1	Distance = 1 029 km $= 1\,029 \times 1\,000$ $= 1\,029\,000 \text{ m}$	MP L2
1.2.2	Cape Town to Johannesburg = 1 402 km Johannesburg to Bloemfontein = 417 km Total = $1\,402 + 417$ $= 1\,819 \text{ km}$ Cape Town to Nelspruit = 1 779 km RT Difference = $1\,819 - 1\,779$ $= 40 \text{ km}$ The claim is valid	MP L4

QUEST	SOLUTION
2.1.1	Hand wash basin /sink (2)
2.1.2	1 window (2)
2.1.3	Length of wall = $4680\text{mm} + 5130\text{mm}$ $= 9810\text{mm}$ Length of bathroom wall = $13\,680 \text{ mm} - 9\,810 \text{ mm}$ $= 3\,870 \text{ mm} - 860 \text{ mm}$ $= 3\,010 \text{ mm}$ (6)
2.2.1	Area of Bathroom = $3,87\text{m} \times 2,25\text{m}$ $= 8,7075 \text{ m}^2$ Area of kitchen = $6,03 \text{ m} \times 5,13 \text{ m}$ $= 30,9339 \text{ m}^2$ Total area = $8,7075 \text{ m}^2 + 30,9339 \text{ m}^2$

	$= 39,6414\text{m}^2$ (8)
2.2.2	Area of tile = $500\text{ mm} \times 500\text{ mm}$ $= 250\,000\text{ mm}^2 \div 1\,000\,000$ $= 0,25\text{ m}^2$ Number of tiles = $39,6414\text{ m}^2 \div 0,25\text{ m}^2$ $= 158,5656\text{ tiles}$ $= 159\text{ tiles}$ 5% breakage = $159\text{ tiles} \times 1,05$ $= 166,95\text{ tiles}$ $= 167\text{ tiles}$ Therefore the building managers claim is invalid (7)

☐ Models

MODELS - SOLUTIONS		
	QUESTION 1 [28]	
QUE	SOLUTION	L/T
1.1	315mm :825mm 21:55 (2)	L2
1.2	No. of stacks(layers) = $\frac{48}{16}$ = 3 (2)	L2
1.3.1	Content = 29,5kg – 14,2kg = 15,3kg (2)	L1
1.3.2	$\frac{15,3\text{kg}}{15,3} = \frac{33,3\text{L}}{15,3}$ 1kg = 2,176 1kg = 2,18L (2)	L2
1.3.3	To allow water to drain when cleaning the trailer (2)	L2
1.4.1	She is correct, to avoid cylinders not to slide sideways/ secure to avoid theft/to allow cool air between cylinders. (3)	L4

1.4.2	Diameter in metres = $315\text{mm} \div 1000$ $= 0,315\text{m}$ Lengthwise = $5,9\text{m} \div 0,315\text{m}$ $= 18,09\dots$ $= 18$ gases Width wise = $2,4\text{m} \div 0,315\text{m}$ $= 7,619\dots$ $= 7$ gases Height wise = $2,2\text{m} \div 0,85\text{m}$ $= 2,588$ $= 2$ Total = $18 \times 7 \times 2$ $= 252$ cylindrical gases Total weight = $252 \times 29,5\text{kg}$ $= 7\,434\text{kg} \div 1000$ $= 7,434\text{tons}$ His statement is correct. (7)	L4
1.4.3	TSA = $2 \times (5,9\text{m} \times 2,4\text{m}) + 2 \times (2,4\text{m} \times 2,2\text{m}) + 2 \times (5,9\text{m} \times 2,2\text{m})$ $= 28,32 + 10,56 + 25,96\text{ m}^2$ $= 64,84\text{ m}^2$ (3)	L2
1.4.3	Number of litres = $60\% \times 64,84\text{ m}^2$ $= (38,904\text{m}^2 \div 4\text{ m}^2) \times 1,5\text{L} \times 2\text{ coats}$ $= 29,17$ $= 30$ (5)	L3
		[25]

	QUESTION 2[28]	
QUE	SOLUTION	L/T
2.1	Number of tiles = $4 \times 20 = 80$ tiles (2)	L1
2.2	Perimeter = $2 \times 1200\text{mm} + 2 \times 1000\text{mm}$ $= 2400\text{mm} + 2000\text{mm}$ $= 4400\text{mm}$ $\frac{4400}{1000}$ $= 4,4\text{m}$ OR Perimeter = $1,2\text{m} + 1\text{m} + 1,2\text{m} + 1\text{m}$ $= 4,4\text{m}$ (4)	L3
2.3	Minimum height = $150\text{mm} \times 5 + 450\text{mm} \times 5$ $= 750\text{mm} + 2250\text{mm}$ $= 3000\text{mm}$ OR Minimum height = $450\text{mm} + 150\text{mm}$ $= 600\text{mm} \times 5$ $= 3000\text{mm}$ (3)	L2
2.4	Length = $4\text{m} \times 1000$ $= 4000\text{mm}$ Lengthwise = $\frac{4000\text{mm}}{1200\text{mm}}$ $= 3,333$ $= 3$ pallets Width wise = $\frac{4000\text{mm}}{1000}$ $= 4$ pallets Totals pallets = $4 \times 3 \times 6$ $= 72$ pallets Total tiles = 72×80 $= 5760$ tiles His statement is incorrect. (8)	L3
2.5.1	• Protect from dismantle(fall/separate) • For easy packing and transportation (4)	L4
2.5.2	Anti-clock wise (2)	L1
2.5.3	Length of wrapping per pallet = $3,6\text{m} \times 3$ $= 10,8\text{m}$ No. of pallets to be wrapped = $\frac{250\text{m}}{10,8\text{m}}$ $= 23,4$ $= 23$ (5)	L2

	QUESTION 3 [25]	
QUE	SOLUTION	L/T
3.1	To assist people/children that cannot read to assemble diagrams. (2)	L4
3.2	Probability Not listed = $\frac{8}{14} \times 100\%$ $=57,14\%$ (3)	L2
3.3	A, F, E, C, B and D (3)	L1
3.4	B (2)	L1
3.5	- Prohibits children under the age of 3 years to assemble the items/toys - Hazardous/ dangerous to children under 3 years (2)	L1
3.6.1	Number scale, one unit on the model truck on the picture represents 150 units in reality. (3)	L1
3.6.2	Original picture length = $\frac{100}{65} \times 3,9cm$ $=6cm$ Actual length = $6cm \times 150$ $=900cm \div 100$ $=9m$ His statement is correct. (5)	L2

3.6.3	Actual length = $2,1m \times 1000$	L3
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	$=2100\text{mm}$ Length of A4 paper = 296mm Model length (1:6) = $\frac{2100\text{mm}}{6}$ $= 350\text{mm}$ Mode length (1:7,5) = $\frac{2100\text{mm}}{7,5}$ $= 280\text{mm}$ The scale of 1:7,5 will fit the model into an A4 paper of 296mm (5)	
		[25]

Probability

MARKING GUIDELINES		T/L
1.1.1	$A = 82 + 93 = 175$ $B = 326 - 114 = 212$	P L1
1.1.2	$\text{Males} = 82 + 98 + 114 + 138 + 95 = 527$ $\therefore \frac{527}{1\,200}$	P L1
1.1.3	$\text{Females} = 93 + 100 + 212 + 147 + 121 = 673$ Or $1\,200 - 527 = 673$ $\therefore \frac{98}{673}$	P L2
1.1.4	$\frac{121}{673} \times 100 = 17.98\%$	P L2
1.1.5	$\frac{326}{1\,200} = 0.27$ Less likely or unlikely	P L3
1.1.6	$\frac{175}{1\,200} \times \frac{285}{1\,200} = 0.1458333 \times 0.2375$ $= 0.03463 \times 100$ $= 3.46\%$	P L3
1.1.7	$\frac{216}{1\,200} + \frac{198}{1\,200}$ $= \frac{414}{1\,200}$ $= \frac{69}{200}$	P L3

1.1.8	$\frac{1}{2} \times 1200 = 600$ $\frac{673}{1200} = 0.56$ Females= 673 OR Statement is correct Statement is correct	P L4
		[25]

2.1.1	(a) Cream (b) Scone (c) CMC	P L1
2.1.2	12 Combinations	P L2
2.1.3	$\frac{1}{12}$	P L1
2.1.4	Cream = $\frac{6}{12} = \frac{1}{2}$ Vanilla = $\frac{6}{12} = \frac{1}{2}$ There are two choices of topping which means each of them have 50% chances or even chances of being chosen, Statement is valid	P L4
2.1.5	18 choices	P L2
2.2.1	$8+12+10+20= 50$ $\frac{12}{50} = \frac{6}{25}$	P L2
2.2.2	0	P L1
2.2.3	$\frac{38}{50} \times 100 = 76\%$ more likely is 75% therefore statement is true	P L4
2.2.4	60%	P L1
2.2.5	0%	P L2
2.2.6	10%	P L2
		[25]