Monyetla Bursary Project

Maths Literacy Grade 12 - MEMO

Lesson 1: Finance

Interest, loans and loan statements:

Simple interest:	
1.	R5 000 x $\frac{7,5}{100}$ = R375 per year For 6 years: R375 x 6 = R2 250 Value = R5 000 + R2 250 $\quad$ = R7 250	Interest is calculated on the same balance each year therefore we can multiply by 6. Value = initial amount + all interest
2.	Deposit = R120 000 x $\frac{20}{100}$ $\quad$ = R24 000 Loan amount = R120 000 – R24 000 $\quad$ = R96 000 Interest = R96 000 x $\frac{10,5}{100}$ x 5 $\quad$ = R48 000 Total amount paid = R24 000 + R96 000 + R48 000 = R168 000	Loan amount = selling price – deposit Hire purchase works the same as simple interest.

Compound interest:		

1.a)	Year 1:
	
	Interest = R130 000 x $\frac{12}{100}$
	
	    = R15 600
	
	Balance = R130 000 + R15 600
	
	    = R145 600
	
	Year 2:
	
	Interest = R145 600 x $\frac{12}{100}$
	
	    = R17 472
	
	Balance = R145 600 + R17 472
	
	    = R163 072
	
	Year 3:
	
	Interest = R163 072 x $\frac{12}{100}$
	
	    = R19 568,64
	
	Total interest = R15 600 + R17 472 + R19 568,64
	
	    = R52 640,64
		The balance for each period is calculated on the balance of the previous period + new interest incurred

b)	Value of investment = R163 072 + R19 568,64
	
	    = R182 640,64
	
	OR
	
	Value of investment = R130 000 + R52 640,64
	
	    = R182 640,64	

2.a)	10% ÷ 4 = 2,5% per quarter	4 quarters in a year, thus 4 interest calculations per year
	Year 1:	
	Q1: R400 000 x $\frac{2,5}{100}$ = R10 000	
	Balance = R400 000 + R10 000	
	= R410 000	
	Q2: R410 000 x $\frac{2,5}{100}$ = R10 250	
	Balance = R410 000 + R10 250	
	= R420 250	
	Q3: R420 250 x $\frac{2,5}{100}$ = R10 506,25	
	Balance = R420 250 + R10 506,25	
	= R430 756,25	
	Q4: R430 756,25 x $\frac{2,5}{100}$ = R10 768,90625	
	Balance = R430 756,25 + R10 768,90625	
	= R441 525,1563	
	Year 2:	
	Q1: R441 525,1563 x $\frac{2,5}{100}$ = R11 038,12891	
	Balance = R441 525,1563 + R11 038,12891	
	= R452 563,2852	
	Q2: R452 563,2852 x $\frac{2,5}{100}$ = R11 314,08213	
	Balance = R452 563,2852 + R11 314,08213	
	= R463 877,37	
b)	Total interest = R463 877,37 – R400 000	
	= R63 877,37	

Repayment of loans:		
1.a)	Interest = R1995 x $\frac{17}{100}$ x 3 = R1 017,45 Total = R1 995 + R1 017,45 = R3 012,45	
b)	Monthly repayment = R3 012,45 ÷ 36 = R83,68	
c)	$\frac{1\ 017,45}{1\ 995}$ x 100 = 51%	
2.a)	24 months	
b)	14,4% ÷ 12 = 1,2% per month A = R12 788,47 x $\frac{1,2}{100}$ = R153,46	
c)	R12 788,47 + R153,46 – R723,03 = R12 218,90	
d)	The balance on which the interest is calculated decreases every month, because you are repaying the loan monthly.	
e)	Real cost = R723,03 x 24 = R17 352,72	

Taxation:

	Income tax	
1.	Annual salary = R17 650 x 12	
	= R211 800	
	Pension contribution = R211 800 x $\frac{7,5}{100}$	
	= R15 885	
	Taxable income = R211 800 – R15 885	
	= R195 915	
	Rates of tax:	
	Bracket 2	
	35 253 + $\frac{26}{100}$(195 915 - 195 850)	
	= 35 253 + $\frac{26}{100}$(65)	
	= 35 253 + 16,9	
	= R35 269,90	
	Less rebates:	
	R35 269,90 – R14 067 – R7 713	
	= R13 489,90	
	Less MTC:	
	R13 489 – (310 x 2 x 12)	
	= R13 489 – R7 440	
	= R6 049	
	Monthly tax = R6 049 ÷ 12	
	= R504,08	

Tariff systems:

	(9 x R0) + (16 x R9,27) + (5 x R12,36) + (15 x R19,06) + (2 x R20,96)
	
	= R537,94
	
	VAT = R537,94 x $\frac{15}{100}$
	
	   = R80,69
	
	Total = R537,94 + R80,69 + R83,43
	
	   = R702,06	

Cost price, selling price and break-even analysis:

1.a)	Cash = R3 500	
	24 month contract = R575 + R0,90 x number of minutes	
b)		

Contract option vs Cash option

Cost in Rand

Number of minutes

c)	If Thelma uses less than 450 minutes of airtime a month, the contract would be her cheapest option. If she uses more than 450 minutes per month the cash option would be cheapest.	