

Resource for Day 3 – Finance and Growth – Monday 23 October

1. Water weed in a dam increases by 6% per month. If the initial area covered by weed is 20 m^2 then what is the area covered after 8 months? (3)
2. A share portfolio loses 3% of its value per year. If it is initially worth R27 000 what will it be worth after 10 years? (3)
3. An item costs R397,44 with 15% VAT included. What did it cost before the VAT was added? (3)
4. A shopkeeper marks up an item by 20% but then offers a 20% discount. What is her net profit or loss expressed as a percentage? (3)
5. An item depreciates at 8% per annum according to the reducing balance method. After how many years (to the nearest year) will it be worth 25% of its original value? (3)
6. What annual rate compounded quarterly will give the same return as 10% p.a. compounded semi-annually (every 6 months)? (4)
7. Thabo deposits $2x$ into an account. Three years later he withdraws x . Five years after his initial deposit he has R10 000. His money earned interest of 10% p.a. compounded monthly for the first 2 years and then 11% p.a. compounded quarterly for the remainder of the time. Find x showing all working details. (7)
8. Nonhlanhla deposits R3000 per month for 5 years months into an account earning 9% p.a. compounded monthly. How much is in the account 3 months after her final payment? (5)
9. Sanele borrows R100 000. He repays it with monthly repayments over 5 years starting one month from the date of the loan. Interest is charged on the outstanding balance at 12% p.a. compounded monthly.
 - How much is his monthly repayment? (5)
 - How much does he still owe after making his 36th payment? (5)
 - How is his 37th payment split between interest and capital? (2)
 - How are his first three years of payments split between interest and capital? (2)
10. Mrs Tholanah borrows R50 000. Interest of 10% p.a. compounded monthly is charged on the outstanding balance. She makes monthly repayments of R1000. How many payments will it take to settle the loan? (6)

11. Nathi has a construction business for which he buys a TLB costing R1 250 000. He plans to use a sinking fund to make provision for the replacement of the TLB in 5 years' time. Over this period the following considerations apply:
- ✓ The price of a new TLB is expected to increase by 6% p.a. due to inflation.
 - ✓ His existing TLB will depreciate at 7,5% p.a. using the reducing balance method. He will trade it in at its depreciated value after 5 years.
 - ✓ His sinking fund will earn 9% p.a. compounded monthly.

How much must Nathi invest per month in order to be able to buy the new TLB when the time comes? (8)