**ENGR301**

**Engineering Management Principles and Economics**

**Tutorial 5 – Time Value of Money**

These questions are sourced from chapter 2 of the course text.

2.2 If a sum of $3000 is borrowed from six months at 9% simple interest per year, what is the total amount due (principal and interest) at the end of six months?

2.6 How much is accumulated in each of these savings plans over two years?

(a) Deposit €1000 today at 10% compounded annually.

(b) Deposit €1000 today at 10% compounded monthly.

2.8 Greg wants to have $50,000 in five years. He has $20,000 today to invest. The bank is offering five-year investment certificates that pay interest compounded quarterly. What is the minimum nominal interest rate he would have to receive to reach his goal?

2.14 Greg wants to have $50,000. He will invest $20,000 today in investment certificates that pay 8% nominal interest, compounded quarterly. How long will it take him to reach his goal?

2.16 You bought an antique car three years ago for $500,000.Today it is worth $650,000.

(a) What annual interest rate did you earn if interest is compounded yearly?

(b) What monthly interest rate did you earn if interest is compounded monthly?

2.18 Some time ago, you put £500 into a bank account for a “rainy day”. Since then, the bank has been paying you 1% per month, compounded monthly. Today, you checked the balance and found it to be £708.31. How long ago did you deposit the £500?

2.20 How long will it take any sum to double itself with…

(a) An 11% simple interest rate?

(b) An 11% interest rate compounded annually?

(c) An 11% interest rate compounded continuously?