1. Two brothers Adam and Ben each inherit $6500. Adam invests his money in a bond that pays simple interest at a rate of 5% per annum. Ben invests his money in a bank that pays compound interest at a rate of 4.5% per annum.

   (a) Calculate the value of **Adam's** investment at the end of 6 years.

   (3)

   (b) Calculate the value of **Ben's** investment at the end of 6 years. Give your answer **correct to 2 decimal places**.

   (3)
   (Total 6 marks)

2. Eva invests USD2000 at a nominal annual interest rate of 8 % **compounded half-yearly**.

   (a) Calculate the value of her investment after 5 years, correct to the nearest dollar.

   (3)

   Toni invests USD1500 at an annual interest rate of 7.8 % **compounded yearly**.

   (b) Find the number of **complete** years it will take for his investment to double in value.

   (3)
   (Total 6 marks)

3. An amount, *C*, of Australian Dollars (AUD) is invested for 5 years at 2.5 % yearly simple interest. The interest earned on this investment is 446.25 AUD.

   (a) Calculate the value of *C*.

   (2)

   5000 AUD is invested at a nominal annual interest rate of 2.5 % **compounded half yearly**.

   (b) Calculate the length of time in years for the interest on this investment to exceed 446.25 AUD.

   (4)
   (Total 6 marks)

4. Mr Tan invested 5000 Swiss Francs (CHF) in Bank A at an annual simple interest rate of r %, for four years. The total interest he received was 568 CHF.

    (a) Calculate the value of r.

                      (3)

    Mr Black invested 5000 CHF in Bank B at a nominal annual interest rate of 3.6 %, **compounded quarterly** for four years.

    (b) Calculate the total interest he received at the end of the four years. Give your answer correct to **two decimal places**.

                      (3)
                (Total 6 marks)

5. Bob invests 3000 USD in a bank that offers simple interest at a rate of 4% per annum.

    (a) Calculate the number of years that it takes for Bob's money to double.

                      (3)

    Charles invests 3000 USD in a bank that offers compound interest at a rate of 3.5% per annum, compounded half-yearly.

    (b) Calculate the number of years that it takes for Charles's money to double.

                      (3)
                (Total 6 marks)

6. Daniel wants to invest $25 000 for a total of three years. There are three investment options.

    Option One   pays simple interest at an annual rate of interest of 6 %.

    Option Two   pays compound interest at a nominal annual rate of interest of 5 %, compounded **annually**.

    Option Three   pays compound interest at a nominal annual rate of interest of 4.8 %, compounded **monthly**.

    (a) Calculate the value of his investment at the end of the third year for each investment option, **correct to two decimal places**.

                      (8)

    (b) Determine Daniel's best investment option.

                      (1)
                (Total 9 marks)

7. **Give all your numerical answers correct to two decimal places.**

On 1 January 2005, Daniel invested 30 000 AUD at an annual **simple** interest rate in a *Regular Saver* account. On 1 January 2007, Daniel had 31 650 AUD in the account.

(a) Calculate the rate of interest.

(3)

On 1 January 2005, Rebecca invested 30 000 AUD in a *Supersaver* account at a nominal annual rate of 2.5 % **compounded annually**.

(b) Calculate the amount in the *Supersaver* account after two years.

(3)

(c) Find the number of complete years since 1 January 2005 it will take for the amount in Rebecca's account to exceed the amount in Daniel's account.

(3)

On 1 January 2007, Daniel reinvested 80 % of the money from the *Regular Saver* account in an *Extra Saver* account at a nominal annual rate of 3 % **compounded quarterly**.

(d) (i) Calculate the amount of money reinvested by Daniel on the 1 January 2007.

(ii) Find the number of complete years it will take for the amount in Daniel's *Extra Saver* account to exceed 30 000 AUD.

(5)
(Total 14 marks)

8. Astrid invests 1200 euros for five years at a nominal annual interest rate of 7.2 %, **compounded monthly**.

(a) Find the interest Astrid has earned during the five years of her investment.
Give your answer correct to two decimal places.

(3)

Helen invests 1200 euros in an annual **simple interest** scheme for five years.
She earns **the same** interest as Astrid.

(b) Find the simple interest rate of this scheme.

(3)
(Total 6 marks)