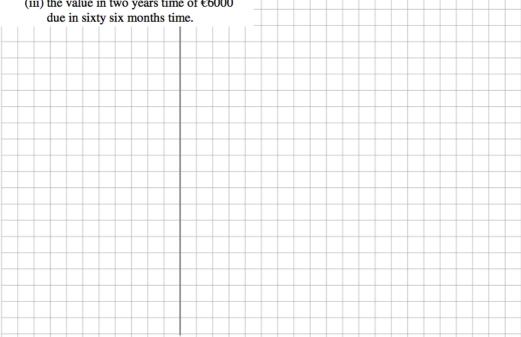
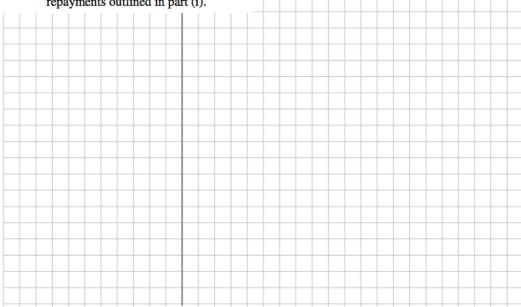


- 3. Present value e.g. If the effective annual rate of interest is  $5\!\cdot\!75\%$  , find (i) the value in twelve years time of €6500 due in two years time,
  - (ii) the value one year ago of €4800 due in two and a half years time,
  - (iii) the value in two years time of €6000



4. Interest rates other than annual e.g. Fiachra has inherited a substantial sum of money which he wants to invest. He researches the interest rates offered by different institutions. A offers a rate of 5.5% per annum, B offers a rate of 0.45% per month and C offers an annual rate of 5%, compounded monthly. If Fiachra wants to maximise his income, which of the three institutions should he invest his money with?

- 5. Amortised loans, including mortgages e.g. Olivia borrows €100000 and agrees to repay the loan by a series of 8 equal annual repayments starting in one year's time. The APR for the loan is 9%.
  - (i) Calculate the amount of each equal annual repayment.
  - (ii) Construct a schedule showing interest and principal portions of the repayments outlined in part (i).



6. Investments, annuities and bonds

e.g. Frank wants to save for his retirement, and so needs to calculate the size of the fund he will need to purchase an annuity, starting on the date of his retirement and lasting for 20 years. Take the AER on the date of his retirement to be  $4\cdot5\%$ .

- (i) Find the value of the fund required to buy an annual payment of €20000 per year (20 payments).
- (ii) Find the value of the fund required to buy an annual payment which starts at €20000 and increases by 3% per year (20 payments).

## 7. Derive the Amortisation Formula

