Questions:

1. Use a spreadsheet to calculate the present value as well as accumulated value at time 15 of an annuity paid annually in advance for 15 years with an annual payment of £2300.  Use i = 5.5% pa effective.  Demonstrate the value obtained using year‐on‐year accumulations and separately using an annuity formula.
2. Plot a graph to show that 400a10p ( p =1,2,3,4,6,12,24 ) tends towards 400 a 10 as p → ∞ based on an effective interest rate of 4% pa.
3. Plot a graph to show that 1250a10p ( p =1,2,3,4,6,12,24 ) tends towards 1250 a 10 as p → ∞ based on an effective rate of discount is 5% pa.
4. Determine the effective annual rate of interest for which the accumulated value at time 8 of an annuity which pays £500 at the end of every six months in years 1 to 8 inclusive equals the present value at time 8 of an annuity which pays £900 annually in advance in years 9 to 18 inclusive.
5. An increasing annuity is payable annually in advance for 8 years.  The first payment is 550. Calculate the present value of the annuity if:

(a) payments increase by 20 each year

(b) payments increase by 75 each year.

You should assume an effective annual rate of interest of 2%.

1. An increasing annuity is payable annually in advance for 15 years.  The first payment is 1200. Calculate the present value of the annuity if:

(a) payments increase by 10% each year

(b) payments increase by 5% each year.

You should assume an effective annual rate of interest of 3%.

1. An increasing annuity is payable annually in advance for 10 years.  The first payment is 100. Calculate the present value of the annuity if:

(a) payments increase by 20 each year

(b) payments increase by 5% each year.

You should assume an effective annual rate of interest of 4%.