Question 17 (8 marks)

Joel has set up a special investment fund that has a current balance of $350 000. He contributes 7.5% of his monthly income to the investment and has an overseas pension which contributes a further $355 per month. The investment fund has an interest rate of 6.5% per annum, compounded monthly. Joel's annual salary is $101 000 and he has just turned 60 years of age.

(a)   Calculate Joel's total monthly contribution to the fund.   (2 marks)

(b)   Calculate the lump sum that he could receive if he retires on his 67th birthday.   (2 marks)

Joel retires at 67 and wants to use his lump sum payment to set up a regular income. He decides to look at two options that offer monthly payments.

Option 1: A reducing balance annuity at 7% per annum, compounded monthly.
Option 2: A perpetuity at 7.5% per annum, compounded monthly.

(c)   Calculate his maximum monthly income for the next 20 years using Option 1.   (2 marks)

(d)   Calculate his monthly income using Option 2.   (2 marks)