Question 13   **(10 marks)**

Mehmet has saved $3600 from wages received at a part-time job. He is keen to invest this money in an account which earns 3.65% per annum, compounded monthly.

Over the next three years, Mehmet plans to continue working part-time and is aiming to make deposits of $250 at the end of each month.

(a)   Write a recursive relation to give the value of the investment at the end of each month.

                                                                                       (2 marks)

(b)   Mehmet hopes that this investment will double his initial savings in one year. Justify whether this is possible.   (2 marks)

(c)   Determine the total amount of interest Mehmet would receive after three years.

                                                                                     (3 marks)

Unfortunately, after two years, Mehmet's working hours are reduced and he is only able to deposit $120 at the end of each month.

(d)   By how much would this reduce the value of his investment by the end of the three years?

(3 marks)