8 The sum of the first 2 terms of a geometric series G is 360
The sum of the 2nd and 3rd terms of G is 288

The nth term of G is U_n

(a) Show that $U_n = A\left(\frac{4}{5}\right)^{n-1}$ where A is an integer to be found.

(7)

(b) Explain why G is convergent.

(1)

(c) Hence find the sum to infinity of G

(2)

(d) Find the least number of terms for which the sum is greater than 978

(4)

Question 8 continued

Question 8 continued

Question 8 continued

(Total for Question 8 is 14 marks)