8 The sum of the first and second terms of a geometric series G is 400

The sum of the second and third terms of G is 100

(a) Show that the common ratio of G is $\frac{1}{4}$

(4)

(b) Show that the first term of G is 320

(2)

(c) Find the sum to infinity of G

(2)

The sum to n terms of G is S_n

(d) Find, using logarithms, the least value of n such that

$$S_n > 426.6$$

(4)

Question 8 continued

Question 8 continued

Question 8 continued

(Total for Question 8 is 12 marks)