7 An arithmetic series P has first term a, common difference d and nth term u_n

Given that $u_5 = 4x + 6$ and that $u_8 = 7x + 3$

(a) (i) show that $d = x - 1$

(ii) find the value of a

(4)

Given further that $u_9 = 42$

(b) find the value of x

(2)

The sum of the first n terms of P is S_n

(c) Find the value of n for which $S_{(n+1)} = 12u_n + 18$

(5)

Question 7 continued

Question 7 continued

Question 7 continued

(Total for Question 7 is 11 marks)