9 (a) Show that $\sum_{r=1}^{n}(5r-1) = \frac{n}{2}(3+5n)$

(3)

(b) Hence, or otherwise, evaluate $\sum_{r=10}^{20}(5r-1)$

(3)

The sum of the first n terms of an arithmetic series is S_n where $S_n = \sum_{r=1}^{n}(5r-1)$

The rth term of this series is u_r

Given that $S_n = 12u_{n+1} + 52$

(c) find the value of n

(5)

Question 9 continued

Question 9 continued

Question 9 continued

(Total for Question 9 is 11 marks)