8 The sum S_n of the first n terms of an arithmetic series is given by $S_n = 2n(n + 3)$

(a) Find the first term of the series.

(1)

(b) Find the common difference of the series.

(2)

The nth term of the series is T_n

Given that $6S_{(n-4)} = 7T_{(n+3)}$

(c) find the value of n.

(6)

Question 8 continued

(Total for Question 8 is 9 marks)