

7 The 7th term of a geometric series is 192 and the 8th term of this geometric series is 1152

(a) Find, as a fraction in its simplest form, the 4th term of this geometric series.

(3)

A different geometric series G has a common ratio r and n th term t_n

Given that $t_3 = 24$ and $t_2 + t_3 + t_4 = -36$

(b) show that r satisfies the equation

$$2r^2 + 5r + 2 = 0$$

(5)

Given further that G is convergent with sum to infinity S ,

(c) find the value of S .

(4)

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(Total for Question 7 is 12 marks)



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