7 **(a)** An athlete runs the first mile of a marathon in 5 minutes. His speed reduces in such a way that each mile takes 12 seconds longer than the preceding mile.

    (i) Given that the nth mile takes 9 minutes, find the value of n.   [2]

    (ii) Assuming that the length of the marathon is 26 miles, find the total time, in hours and minutes, to complete the marathon.   [2]

(b) The second and third terms of a geometric progression are 48 and 32 respectively. Find the sum to infinity of the progression.   [4]