

- 4** Three geometric progressions, P , Q and R , are such that their sums to infinity are the first three terms respectively of an arithmetic progression.

Progression P is $2, 1, \frac{1}{2}, \frac{1}{4}, \dots$.

Progression Q is $3, 1, \frac{1}{3}, \frac{1}{9}, \dots$.

- (i) Find the sum to infinity of progression R . [3]
- (ii) Given that the first term of R is 4, find the sum of the first three terms of R . [3]