11 **(a)** The first three terms of an arithmetic progression are $\frac{1}{p}$, $\frac{1}{q}$, $-\frac{1}{q}$.

(i) Show that the common difference can be written as $-\frac{2}{3p}$. [3]

(ii) The 10th term of the progression is $\frac{k}{p}$, where k is a constant. Find the value of k. [2]

(b) The sum to infinity of a geometric progression is 8. The second term of the progression is $\frac{3}{2}$. Find the two possible values of the common ratio. [5]