9 The first, second and third terms of a geometric progression are $3k$, $5k - 6$ and $6k - 4$, respectively.

(i) Show that k satisfies the equation $7k^2 - 48k + 36 = 0$. [2]

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(ii) Find, showing all necessary working, the exact values of the common ratio corresponding to each of the possible values of k. [4]

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(iii) One of these ratios gives a progression which is convergent. Find the sum to infinity. [2]

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