

11 The first three terms of a geometric sequence are $5k - 2$, $3k - 6$, $k + 2$, where k is a constant.

(a) Show that k satisfies the equation $k^2 - 11k + 10 = 0$. **[3]**

(b) When k takes the smaller of the two possible values, find the sum of the first 20 terms of the sequence. **[3]**

(c) When k takes the larger of the two possible values, find the sum to infinity of the sequence. **[2]**