Sequences may be generated by recurrence relations of the form 
\[ u_{n+1} = ku_n - 20, \ u_0 = 5 \] where \( k \in \mathbb{R} \).

(a) Show that \( u_2 = 5k^2 - 20k - 20 \).

(b) Determine the range of values of \( k \) for which \( u_2 < u_0 \).

Answers

(a) Proof
(b) \(-1 < k < 5\)