Exercise 1

A recursive sequence calculates the next term in the sequence from the previous number.
Calculate the terms u_2, u_3 and u_4 for the sequence

5 marks

$$\begin{cases} u_1 = 8 \\ u_{n+1} = \dfrac{1}{2}u_n \end{cases}$$

and state explicitly what type of sequence this is.
Hence calculate the sum to infinity for this sequence.