12 The terms, u_n, of a periodic sequence are defined by

$$u_1 = 3 \quad \text{and} \quad u_{n+1} = \frac{-6}{u_n}$$

12 (a) Find u_2, u_3 and u_4 **[2 marks]**

12 (b) State the period of the sequence. **[1 mark]**

12 (c) Find the value of $\sum_{n=1}^{101} u_n$ **[2 marks]**