

4. A sequence u_1, u_2, u_3, \dots is defined by

$$u_{n+1} = ku_n - 5$$

$$u_1 = 6$$

where k is a positive constant.

Given that $u_3 = -1$

- (a) show that

$$6k^2 - 5k - 4 = 0 \quad (2)$$

- (b) Hence

- (i) find the value of k ,

- (ii) find the value of $\sum_{r=1}^3 u_r$ (3)

