2 A sequence is defined for $n \geq 1$ by the recurrence relation,

$$u_{n+1} = \frac{10u_n}{1 + 16u_n}, \qquad u_1 = \frac{1}{5}$$

Determine an expression for u_n in the form

$$u_n = \frac{a^{n-1}}{c + ka^{n-1}}$$

where a, c and k are constants to be found.

[12 marks]