2	$u_1 = \frac{1}{5}$ $\frac{1}{k+c} = \frac{1}{5}$ $c = 5 - k$	M1
	$u_2 = \frac{10 \times \frac{1}{5}}{1 + 16 \times \frac{1}{5}} = \frac{10}{21}$ $u_3 = \frac{10 \times \frac{10}{21}}{1 + 16 \times \frac{10}{21}} = \frac{100}{181}$	M1
	$u_2 = \frac{a}{ka + c} = \frac{10}{21}$ $ka + c = \frac{21a}{10}$	M1
	$u_3 = \frac{a^2}{ka^2 + c} = \frac{100}{181}$ $ka^2 + c = \frac{181a^2}{100}$	M1
	$ka + (5 - k) = \frac{21a}{10}$ $k(a - 1) = \frac{21a}{10} - 5$	M1
	$ka^2 + (5 - k) = \frac{181a^2}{100}$ $k(a^2 - 1) = \frac{181a^2}{100} - 5$	M1
	$\frac{k(a^2 - 1)}{k(a - 1)} = \frac{\frac{181a^2}{100} - 5}{\frac{21a}{10} - 5}$ $(a + 1) = \frac{181a^2 - 500}{210a - 500}$	M1
	$210a^2 - 290a - 500 = 181a^2 - 500$ $29a^2 - 290a = 0$	M1
	$a(a - 10) = 0$ $a = 10, a \neq 0$	M1
	$k(10 - 1) = \frac{21(10)}{10} - 5$ $k = \frac{16}{9}$	M1
	$c = 5 - \frac{16}{9}$ $c = \frac{29}{9}$	M1
	$u_n = \frac{10^{n-1}}{\frac{29}{9} + \frac{16}{9} \times 10^{n-1}}$	B1
		[12]
		[12 marks]