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Sequences - definition and nth term

A sequence is a set of terms which follow a rule (pattern). $u_1, u_2, u_3, \ldots\ldots, u_n$

u_1	u_2	u_3	u_4	u_5	rule	u_n
3	7	11	15	19	Goes up in steps of 4	$4n-1$
1	4	9	16	25	Square numbers	n^2
$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$	$\frac{5}{6}$	Fractions where the numerator is the same as the term and the denominator is one more than the term	$\frac{n}{n+1}$

Find the first three terms and the 7th term of the sequence where $u_n = (-1)^n \frac{n}{n+3}$

$u_1 = (-1)^1 \frac{1}{1+3} = -\frac{1}{4}$ $\quad u_2 = (-1)^2 \left(\frac{2}{5}\right) = \frac{2}{5}$ $\quad u_3 = (-1)^3 \left(\frac{3}{6}\right) = -\frac{1}{2}$ $\quad u_7 = (-1)^7 \left(\frac{7}{10}\right) = -\frac{7}{10}$

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