

## 1   Sum of Geometric Series

Let  $(a_i)_{i \geq 0}$  be a geometric sequence with common ratio  $r \neq 1$ . Then for some  $n \in \mathbb{N}$ ,

$$\sum_{i=0}^n a_i = \frac{a_0(1 - r^{n+1})}{1 - r}.$$

*Proof.* [∃ – Real.Geometric.sum\\_recursive\\_closed](#)

□