Sum of Arithmetic Series

Let $(a_i)_{i \geq 0}$ be an arithmetic sequence with common difference d. Then for some $n \in \mathbb{N}$,

$$\sum_{i=0}^{n} a_i = \frac{(n+1)(a_0 + a_n)}{2}.$$

Proof. Real.Arithmetic.sum_recursive_closed

□