

Definition: Closed form

If a sum with a variable number of terms is shown to be equal to a formula that does not contain either an ellipsis or a summation symbol, we say that it is written in **closed form**.

$$1 + 2 + 3 + \cdots + n = \frac{n(n+1)}{2}$$

expresses the sum $1 + 2 + 3 + \cdots + n$ in closed form.