1. Finish the definition for \( \lim_{n \to \infty} s_n = l \) in terms of \( \epsilon \) and \( N \).

A sequence \( s_n \) of real numbers converges to a limit \( l \) if

2. Claim: \( 1 + 2 + \ldots + n = \frac{n(n+1)}{2} \) for \( n = 1, 2, 3, \ldots \)

Prove this claim by induction.