Abstract

It is fairly easy to show that
\[ n! \sim Cn^{n+\frac{1}{2}}e^{-n} \quad \text{as} \quad n \to \infty, \]
and it is then standard procedure to use Wallis’ product to show that
\[ C = \sqrt{2\pi}. \]

The purpose of this note is to show that there is an alternative route to determining \( C \).