1. Consider the series $\sum_{k=2}^{\infty} \frac{3^k}{5^k + 2k}$

   1.1 Show that the series converges.

   1.2 Find a value N so that $R_N \leq 10^{-10}$.

   (Hint: Compare R_N to a geometric series $\sum_{k=N+1}^{\infty} r^k$)

   1.3 Approximate the value of the series accurate within 10^{-10} by using Maple to calculate S_N.

2. Do the following series converge or diverge?

$$(a) \sum_{j=5}^{\infty} \frac{j!}{(j+2)!} \qquad (b) \sum_{k=2}^{\infty} \frac{2k}{7k + 18}$$