1. Do the following series converge or diverge?

   (a) $\displaystyle\sum_{k=2}^{\infty} \frac{3^k}{5^k + 2k}$

   (b) $\displaystyle\sum_{k=2}^{\infty} \frac{2k}{7k + 18}$

   (c) $\displaystyle\sum_{j=5}^{\infty} \frac{j!}{(j+2)!}$

2. Re-consider the series $\displaystyle\sum_{k=2}^{\infty} \frac{3^k}{5^k + 2k}$

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

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

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