

# Calculus with Analytic Geometry II

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## 1 Ratio/Root Test Worksheet

Use the root or ratio test to determine the convergence/divergence of the following series.

I.  $\sum_{k=1}^{\infty} \frac{1}{k!}$

II.  $\sum_{k=1}^{\infty} \frac{k^k}{k!}$

III.  $\sum_{k=1}^{\infty} \frac{(2k)!}{4^k}$

IV.  $\sum_{k=1}^{\infty} \frac{1}{2k-1}$

V.  $\sum_{k=1}^{\infty} \frac{k}{2^k}$

VI.  $\sum_{k=1}^{\infty} \left( \frac{4k-5}{2k+1} \right)^k$

VII.  $\sum_{k=1}^{\infty} \left( \frac{1}{\ln(k+1)} \right)^k$