# Calculus with Analytic Geometry II

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## 1 Comparison Test Worksheet

I. Use the direct comparision test to determine the convergence/divergence of the following sequences:

   a. $\displaystyle\sum_{k=1}^{\infty} \frac{1}{2+3^k}$

   b. $\displaystyle\sum_{k=1}^{\infty} \frac{1}{1+\sqrt{k}}$

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

II. Use the limit comparison test to determine the convergence/divergence of the following sequences:

   a. $\displaystyle\sum_{k=1}^{\infty} \frac{\sqrt{k}}{k^2+1}$

   b. $\displaystyle\sum_{k=1}^{\infty} \frac{2k^3-7k}{k^4+3k^2+1}$

   c. $\displaystyle\sum_{k=1}^{\infty} \frac{4k^3+1}{k2^k}$