

Comparison Tests Worksheet

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1 Exercises

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

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

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

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

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

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

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

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