

## Math 102 — Comparison test

*Summary.* Try each of the following problems together in a small group.

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**Problem 1.** Make a conjecture about whether each of the following series converges or diverges.

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

b.  $\sum_{n=1}^{\infty} \frac{n^2}{n^4+1}$

c.  $\sum_{n=1}^{\infty} \frac{1}{n+e^n}$

d.  $\sum_{n=1}^{\infty} \frac{n}{5n^2-3}$

**Problem 2.** Use the comparison test to explain why your conjectures are true.