

## Math 102 — Series practice

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**Problem 1.** For each of the following series: (1) decide on a test to use, (2) use the test to determine whether the series converges or diverges, (3) write up a conclusion statement that makes clear the test used and your conclusion about convergence or divergence.

a.  $\sum_{n=1}^{\infty} \frac{n!}{3^n}$

b.  $\sum_{n=1}^{\infty} \frac{(-1/4)^n}{n}$

c.  $\sum_{n=1}^{\infty} \frac{5}{7n^3 - n^2 + 5}$

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