

Problem Set
Sections 11.6

The Ratio and Root Tests

Problem 1

Test for convergence $\sum_{n=1}^{\infty} \frac{10^n}{(n+1)4^{2n+1}}$.

Problem 2

Test for convergence $\sum_{n=1}^{\infty} \frac{n!}{n^n}$.

Problem 3

Test for convergence $\sum_{n=1}^{\infty} \left(1 + \frac{1}{n}\right)^{n^2}$.

Problem 4

Test for convergence $\sum_{n=1}^{\infty} (\arctan n)^n$.

Problem 5

Test for convergence $\sum_{n=1}^{\infty} \frac{\sin(n\pi/6)}{1 + n\sqrt{n}}$.

Problem 6

Test for convergence $\sum_{n=2}^{\infty} \frac{(-1)^n}{\sqrt{n} \ln n}$.

