Main Ideas

- **Integral Test** If a_n is a sequence of positive terms, and $a_n = f(n)$ for all $n \geq N$, where f is a

  1. Continuous
  2. Positive
  3. Decreasing

  function of x, then the series

  $$\sum_{n=N}^{\infty} a_n \qquad \text{and the integral} \qquad \int_N^{\infty} f(x)\, dx$$

  either both converge or both diverge.

- **P-Series**

  $$\sum_{n=1}^{\infty} \frac{1}{n^p} \qquad \text{converges if and only if} \qquad p > 1$$

Homework Problems

1.