

Mathematics 3790H – Analysis I: Introduction to analysis

TRENT UNIVERSITY, Winter 2012

Assignment #6

More p -tests

Due on Thursday, 1 March, 2012.

1. Determine for which p the series $\sum_{n=1}^{\infty} \frac{\ln(n)}{n^p}$ converges and for which it diverges. [4]
2. Determine for which p the series $\sum_{n=1}^{\infty} \frac{\ln(n^p)}{n^p}$ converges and for which it diverges. [2]
3. Determine for which p the series $\sum_{n=1}^{\infty} \frac{[\ln(n)]^p}{n^p}$ converges and for which it diverges. [4]