

## Homework 01

1. Section 8.8:

Verify the convergence/divergence of the improper integrals  $\int_0^1 \frac{1}{x^p} dx$  and  $\int_1^\infty \frac{1}{x^p} dx$  for  $p > 1$ ,  $p = 1$  and  $0 < p < 1$ , respectively by direct evaluation (total 6 cases). Then memorize the results.

2. Section 8.8:

Problems: 7, 13, 25, 31.