

## Homework Assignment for Week 16-1

Assigned Dec 29, 2011.

1. Check if the improper integrals  $\int_0^1 x^{-p} dx$  and  $\int_1^\infty x^{-p} dx$  converge for the cases  $p > 1$ ,  $p = 1$  and  $0 < p < 1$ , respectively by direct evaluation. Then memorize the results.
2. Section 8.6: Problems: 7, 13, 21, 25, 31, 33, 37, 38, 41, 51, 54, 55, 56, 58, 60, 71, 73.  
You may find it convenient to use Theorem 1 and Theorem 2 for almost all of the problems. Simply compare the integrand with one of the cases in Problem 1 above.