

Problem Set Six

Exercises

7.8: 1, **3**, 4, 13, **22**, **24**, **32**,33,34

8.1: 2, **7**, **10**, 15, 21, **34**, **42**,43,59,**60**,**67**

Problem

Explain, using graphs, why the two following improper integrals are equal:

$$\int_0^1 \ln(x) dx = \int_{-\infty}^0 e^x dx.$$

$$\int_0^1 \frac{1}{\sqrt{x}} dx = 1 + \int_1^{\infty} \frac{1}{x^2} dx.$$

(Show the integral as the area of shaded region on your graph).
Then compute one side of each integral exactly.