## PRINCIPLES OF MATH

## Homework 6

due Thursday, October 10

1. Let  $\mathbb{R}^+$  denote the set of positive real numbers. Prove that

$$\bigcap_{r\in\mathbb{R}^+}(-r,r)=\{0\}$$

**2.** Prove that

$$\left(\bigcup_{\alpha\in\Delta}A_{\alpha}\right)\cup\left(\bigcup_{\beta\in\Gamma}A_{\beta}\right)=\bigcup_{\omega\in(\Delta\cup\Gamma)}A_{\omega}.$$