## PRINCIPLES OF MATH

Homework 10

due Thursday, November 16

**1.** Let f be a function from A to B. For each  $a \in A$ , define

$$P_a = \{ x \in A \colon f(x) = f(a) \}$$

Prove that  $\{P_a : a \in A\}$  is a partition of A.

**2.** Let  $\mathcal{P}$  be a partition of a set T. Define R to be the relation

$$R = \{(t, S) \in T \times \mathcal{P} \colon t \in S\}.$$

Prove that R is a function, with domain T.