

**Due In Class:** Thursday, September 11

**Reading:** Read Chapter 2 in the textbook.

Turn in the following problems. Exercise a.b refers to Exercise b in Chapter a of the textbook.

**Problem A:** Let  $X$  and  $Y$  be arbitrary sets, and let  $f : X \rightarrow Y$  be a function. Prove that  $f$  is surjective if and only if  $f$  has a right inverse (i.e. there exists a function  $g : Y \rightarrow X$  such that  $f(g(y)) = y$  for all  $y \in Y$ ).

**Problem B:** Exercise 2.2.

**Problem C:** Exercise 2.7.

**Problem D:** Exercise 2.8. *You must prove your assertions.*

**Problem E:** Exercise 2.11. *You must prove your assertions.*