

Assignment 4

MA1124 2014.

1 (a) Prove that if f is 1-1, then

$$f(A \cap B) = f(A) \cap f(B), \text{ any } A, B.$$

(b) Prove that if A and B are disjoint
 $A, B \subset X$
and $f: X \rightarrow Y$ is ~~1-1~~

such that f is 1-1 on A , and
 f is 1-1 on B , then

$$f \text{ is 1-1 on } A \cup B \Leftrightarrow f(A) \cap f(B) = \emptyset.$$

2. This may be hard

$$\text{Prove } \prod_{i=1}^{\infty} \{0, 1\} \sim \prod_{i=1}^{\infty} \{0, 1, 2, \dots, 9\}.$$

3. #34 on page 45 of Lipschutz.