

COMPUTER SCIENCE 20, SPRING 2012
DISCRETE MATHEMATICS FOR COMPUTER SCIENCE

Class #10 (Relations)

Homework, due in hard copy Wednesday 2/15/2012 at 10:10am

Please write your TF's name on your homework, and list the names of any students with whom you collaborated.

1. Find a bijection between the set of all integers and the set of non-negative integers. That is, give a rule/formula assigning each integer to a non-negative integer and vice versa.
2. (a) Show that if two finite sets A and B are the same size, and r is a total injective function from A to B , then r is also surjective; i.e. r is a bijection.
(b) Give a counterexample showing that the conclusion of part (a) does not necessarily hold if A and B are two infinite sets that have the same cardinality.