The Cardinality of a Set

CSE 1400 Applied Discrete Mathematics

Spring 2013

The purpose of these exercises is to test your knowledge of cardinality.

1. You make need to look up answers to these questions: What is the cardinality of
   (a) the DNA alphabet?
   (b) the Protein alphabet?
   (c) the Arabic alphabet?
   (d) the Greek alphabet?
2. What is the cardinality of
   (a) the natural numbers?
   (b) the integers?
   (c) the rational numbers?
   (d) the real numbers?
3. This question requires knowledge which will be covered later in the course. Show that the function $f(n) = n/2$ when n is even and $f(n) = -(n+1)/2$ when n is odd is a one-to-one and onto function from the natural numbers to the integers.