

## MATH 323 Section 2

### QUIZ 6

March 18<sup>th</sup>, 2013

Your Name: \_\_\_\_\_

a) Without using the words “range” or “image”, write what it means a function  $f : A \rightarrow B$  to be surjective.

b) Show that the set  $\mathbb{N} = \{1, 2, 3, 4, \dots\}$  is equinumerous to the set  $\mathbb{N} \setminus \{1\} = \{2, 3, 4, 5, \dots\}$ .

a) The function  $f$  is surjective if for every  $b \in B$  there exists  $a \in A$  such that  $f(a) = b$ .

b) We note that the function  $f(n) = n + 1$  is a function  $\mathbb{N} \rightarrow \mathbb{N} \setminus \{1\}$ . It has inverse  $g(n) = n - 1$  that satisfies  $f(g(n)) = n$  and  $g(f(n)) = n$ .