

Examlet 3 Foundations of Advanced Math 3/25/16

1. a) State the definition of an injection.

- b) State the definition of a surjection.

- c) State the definition of equipollent sets.

- d) State the definition of a denumerable set.

- e) State the definition of a countable set.

2. a) If $f: A \rightarrow B$ has an inverse function g , then g has f as an inverse function also.

b) Give an example of functions $f: A \rightarrow B$ and $g: B \rightarrow A$ where $\exists a \in A$ such that $g \circ f(a) = a$, but g is not an inverse function for f .

3. If $f:A \rightarrow B$ and $g:B \rightarrow C$ are injective functions, then $g \circ f$ is injective.

4. The set of integers, \mathbb{Z} , is denumerable.

5. If A is equipollent to B , and B is equipollent to C , then A is equipollent to C .

