If A and B are finite show that the number of functions $f: A \to B$ is finite.

let N be the size of A, M the size of B then for $a \in A$ there are M assignments to ~~ele~~ elements $b \in B$. Since we have N elements the total number of functions is N^M

another way since A is finite there is some n s.t there is a bijection $f: \{1, \dots, n\} \to A$ that means we ~~a~~ can order the elements as a_i if $f(i) = a_i$ then take $b \in B^n$ and let $g_b: A \to B$ be the function s.t $g_b(a_i) = b_i$ since B^n is a finite cartesian product on a finite set ~~the num~~ $\{g_b\}_{b \in B^n}$ is finite.