Discrete Math
Quiz 5

Name:_____

You have 10 minutes to complete this quiz. You may not use any unauthorized sources and you may not communicate with others about the exam. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. Show that the empty set is finite.

We must show that there is a bijection from a natural number to $\emptyset$. For this, it suffices to observe that the identity function on the empty set is a bijection $\mathrm{id}_\emptyset : 0 \to \emptyset$.

2. State the Pigeonhole Principle.

Pigeonhole Principle. If $m < n$, then there is no injection $f : n \to m$.