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Math 5710 Friday, 6/26/20 Quiz 05

1. What is your name?

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2. Write two paragraphs that explain why the following proposition is true:

$$\exists!\ A \in \{\text{sets}\} \ni (\nexists B \in \{\text{sets}\} \ni (A \sim B \wedge A \neq B))$$

There uniquely exists a set A which is a subset of all sets such that there does not exist set B which is a subset of all sets such that A is equivalent to B and A does not equal B.

Since you cannot have a set with cardinality < 0, we don't need to think about those. Say we pick a set with cardinality $= 1$. There are an infinite number of sets we could pick. The same is true for all sets with cardinality > 0. This leaves only the set with cardinality $= 0$.

That set is $\emptyset$. No other set has cardinality $= 0$ that is not the empty set, and therefore the statement is true.

3. Smile.