1. What is a proposition?

2. Give an example of an expression that isn’t a proposition.

3. Explain the conjunction, and disjunction of two propositions.

4. What is a predicate?

5. What are the two standard quantifiers? Give their names and symbols.

6. How do quantifiers make expressions propositions?

7. How are sets defined?

8. What is the notation for an object being an element of a set? A set being a subset of a set? A set being a proper subset of a set?

9. What are the common operations on sets? Please express in set builder notation and logic.

10. What is the power set of a given set?

11. What is Russell’s Paradox?

12. What is the most commonly used set of axioms for an axiomatic set theory? How does it approach resolving Russell’s Paradox?
13. What is the definition of a function? Use set theory for your explanation.

14. What does it mean for a function to be injective, surjective, or bijective?

15. Given two sets, how can one tell if they are the same cardinality?

16. Given two sets not of the same cardinality, how do you determine which has the larger cardinality?

17. What is the definition of a set being finite or infinite?

18. What does it mean to say that a set is countably infinite?