Math 2001: Homework W5

The following assignment will be graded with an emphasis on clarity of exposition. You should write in complete sentences, be as precise as possible, and be mathematically correct (both in content and format). Be sure to include a title, a short introduction to the topic, and to define all the relevant mathematical terms. The assignment should be **typed**.

The goal of this assignment is to show that for each $n \in \mathbb{Z}_{\geq 1}$, the set M_n is either in bijection with either C_n or D_n. Be sure to

(a) Give clear and precise definitions for the sets involved.

(b) State the main theorem in the correct mathematical format (the theorem is not a section).

(c) Prove the theorem by constructing explicit invertible functions between the sets for each n and finding an explicit description of the inverse (don't forget to show that it is in fact an inverse function).

(d) Give a large example that helps illustrate your constructions.

I will pay especially close attention with how well you convey the constructed functions abstractly.