1. 2 marks Does there exist a continuous bijective function \( f : \mathbb{R} \rightarrow \mathbb{R} - \{1\} \)? Explain. 
   \textit{Hint:} Recall the Intermediate Value Theorem.

2. 2 marks 10.1

3. 2 marks 10.2

4. 3 marks 10.8

5. 3 marks 10.9

6. 4 marks If \( A \) is a non-empty finite set and \( B \) is denumerable, prove that \( A \times B \) is denumerable.

7. 5 marks 10.18

8. 4 marks Prove that \(|(0, \infty)| = |\mathbb{R}|\) by finding a bijection between the two sets.