

# Maths for Computing

## Assignment 3

1. (3 marks) Prove or disprove the following statement. The set of real numbers containing only a finite number of 1s in their decimal representation is countable.

(Numbers allowed in the sets are 1.11, 11.1, 1.111, etc. Numbers not allowed in the set are 1.11..., 1.2, 3.4111..., etc.)

2. (5 marks) Let  $X = \{x \mid x \text{ is a real number such that } 1 < x < 2\}$ . Then prove that  $|X| = |R|$ .