MATH310 Groupwork 2022-08-15

NAME:

1. We know $(0, 1)$ is uncountable. Use this fact to prove that $(0, 2)$ is uncountable.

   Hint: What if there were a bijection $f : \mathbb{Z}^+ \to (0, 2)$?

   Solution:

2. Give an example of a set $S \subseteq \mathbb{R}$ consisting of a denumerable set of points (so not an interval) which has an infimum but no minimum. No proof is necessary.

   Solution:

3. Prove that the supremum of $(-\infty, 3)$ equals 3.

   Solution: