MATH310 Groupwork 2022-07-19

NAME:

1. Prove $\forall a, b, c \in \mathbb{Z}$ if a divides $b-1$ and a divides $c-1$ then a divides $bc-1$.
   Solution:

2. Prove there exist integers m and n such that $15m + 9n = 3$.
   Solution:

3. Prove by contradiction that there is no smallest positive real number.

   Solution:

4. Prove there is a unique function $f(x)$ such that $f'(x) = 2x$ and $f(0) = 3$. You may assume that if two functions have the same derivative then they differ by a constant. You may not integrate as part of your proof!

   Solution: