MATH 4377/6308 - Advanced linear algebra I - Summer 2024
Quiz 1

(1) [6 Pts] Let $f : [0, 2\pi] \to [-1, 1]$ be defined by $f(x) = \cos(x)$.

   a) Is f one-to-one? Is f onto?

   b) Find an interval S, such that $f|_S$ is both one-to-one and onto. Sketch the function on S.

(2) [4 Pts] Let $x, y \in \mathbb{Z}$. Let $x \sim y$ if and only if $y + 4x$ is an integer multiple of 5. Prove that $\sim$ is a transitive relation.