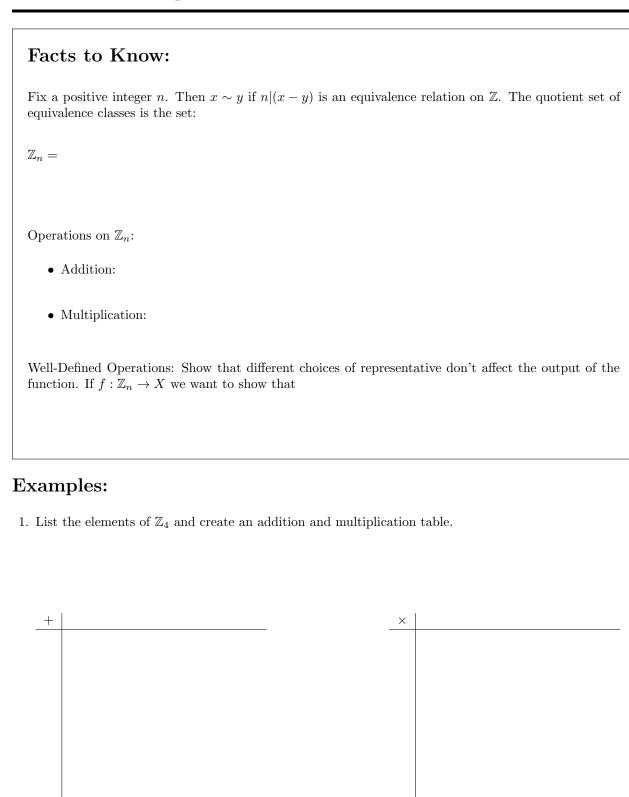
MATH 120A Prep: Modular Arithmetic



2. Show that the function $f: \mathbb{Z}_5 \to \mathbb{Z}_5$ defined by $f([a]) = [a^2]$ is well-defined. Is it a bijection?

3. Let $[a]_n$ denote the equivalence class of a in \mathbb{Z}_n . Prove that the map $g: \mathbb{Z}_3 \to \mathbb{Z}_6$ defined by $g([a]_3) = [2a]_6$ is well-defined and injective but not surjective. Is $g([a]_3) = [3a]_6$ well-defined?