

MATH 113: DISCRETE STRUCTURES
HOMEWORK FOR WEDNESDAY WEEK 3

Problem 1. Let $f : A \rightarrow B$ be a function. Show that a function $g : B \rightarrow A$ such that $f \circ g = \text{id}_B$ exists if and only if f is surjective.

Problem 2. Suppose that f and g are composable functions.

(a) If $g \circ f$ is surjective, does g have to be surjective? Does f have to be surjective?

(b) If $g \circ f$ is injective, does g have to be injective? Does f have to be injective?

(Explain all of your reasoning.)