Office hours today 1:30 -2:30
Math lounge
Padelford C-wing 1st floor

Problem 1

Given $(a, b, c, d) \in \mathbb{R}^4$, let $f : \mathbb{R}^2 \to \mathbb{R}^2$ be defined by

$$f(x, y) = (ax + by, cx + dy).$$

Prove that f injective if and only if $ad - bc \neq 0$.

Problem 2

Given $(a, b, c, d) \in \mathbb{R}^4$, let $f : \mathbb{R}^2 \to \mathbb{R}^2$ be defined by

$$f(x, y) = (ax + by, cx + dy).$$

Prove that f surjective if and only if $ad - bc \neq 0$.