

THE CHINESE UNIVERSITY OF HONG KONG
Department of Mathematics
MATH2010F Advanced Calculus I
Homework 3
Due Date: 11:59pm, 27 June, 2025

1. Let $f : U \subseteq \mathbb{R}^n \rightarrow V \subseteq \mathbb{R}^m$. Define what it means for f to be:
 - (a) Injective;
 - (b) Surjective;
 - (c) Bijective.

Ensure you provide the full definitions for each of the above.

2. Give the full statements of both the Implicit Function Theorem and the Inverse Function Theorem and explain the difference between the two theorems.