

Name and Student ID's: _____

Homework 11, Advanced Calculus 2

1. Prove that the Implicit Function Theorem implies the Inverse Function Theorem.
2. Prove that the Rank Theorem implies the Inverse Function Theorem.
3. Let $F : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ be define by

$$F(x, y) = (e^x \cos y, e^x \sin y).$$

- (a) What is the range of F ?
 - (b) Prove that DF is invertible everywhere. However, F is not a bijective map.
4. Bartle Section 41: E, G, J, M, O.
 5. Bartle Section 42: D, K, M, W.