Homework 2

Prove (or complete the in-class proof of) each of the following:

1. \( \lim_{{z \to a}} f(z) = w \) if and only if for every sequence \( z_n \to a \), the sequence \( f(z_n) \) converges to \( w \).

2. If \( z_n = x_n + iy_n \) and \( c = a + bi \), then \( z_n \to c \) if and only if both \( x_n \to a \) and \( y_n \to b \).