



COMPLEX VARIABLES
SPRING 2020

ASSIGNMENT 3.2
DUE FEBRUARY 12

Exercise 1. Prove that $\overline{e^z} = e^{\bar{z}}$ for all $z \in \mathbb{C}$.

Exercise 2. Find every value of $z \in \mathbb{C}$ for which $\overline{e^{iz}} = e^{i\bar{z}}$.

Exercise 3. Prove that $\log zw = \log z + \log w$, in the sense that both sides take on the same values, for all $z, w \in \mathbb{C}^\times$.

Exercise 4. Give necessary and sufficient conditions on $z, w \in \mathbb{C}^\times$ so that $\text{Log } zw = \text{Log } z + \text{Log } w$.