Homework 1

Reading: Chapter 1 Sections 1-4

Homework Problems:

1. Show that $\text{Re}(iz) = -\text{Im} z$.
2. Show that $z = -1 \pm 2i$ are both roots of the equation $z^2 + 2z + 5 = 0$.
3. State and prove the distributive law for complex numbers.
4. Prove that if $z, w, v \in \mathbb{C}$ and $zwv = 0$ then at least one of $z, w$ and $v$ must be 0.
5. Show that $|\text{Im} z| \leq |z|
6. Show that $\sqrt{2}|z| \geq |\text{Re} z| + |\text{Im} z|$. 