Exercise 1. 1.4.13 and 1.4.14. I didn't define it in class, but a set is *closed* if and only if its complement in $\mathbb{C}$ is open.

Exercise 2. 1.4.20.

Exercise 3. Let $y_0 \in \mathbb{R}$ and let $\arg z$ denote the branch of the argument taking values in $[y_0, y_0 + 2\pi)$. For what values of $z_0 \in \mathbb{C}^\times$ does $\lim\limits_{z \to z_0} \arg z$ exist?