Math 427
Homework 2

Autumn 2019
Due Wednesday, October 16

Section 1.4: 3, 8, 15, 16
Section 2.1: 4, 5, 7, 14

## Additional problem.

Let $\arg _{(-\pi, \pi]}(z)$ be the principal branch of $\arg (z)$, which takes values in $(-\pi, \pi]$. Let $\sqrt{w}$ be the corresponding branch of the square root:

$$
\sqrt{w}=|w|^{\frac{1}{2}} e^{\frac{i}{2} \arg _{(-\pi, \pi]}(w)} .
$$

Find the set of $z$ where $\sqrt{z^{2}+1}$ is discontinuous.

