

HW 8

Due: Thursday, April 17

Do 5.1.1, 5.1.2, 5.1.3, and the following:

- A. Using exponential notation, show that for $n \in \mathbb{Z}$, $n \geq 1$, the number of solutions to $z^n = 1$ is n .
- B. In the complex plane, graph the set of points satisfying $|z - i| = 1$.
- C. Using only z and \bar{z} , come up with an equation for the line $y = 0$. (That is, do not use x or y in your equation.)
- D. Using only z and \bar{z} , come up with an equation for the line $y = x$.
- E. Come up with an algebraic expression for the function $f : \mathbb{C} \rightarrow \mathbb{C}$ which reflects inputs across the line $y = x$, using only z and \bar{z} .