

Practice Exercise For Lecture 8

- Q1. If $e^{2ix} = \cos 2x + i \sin 2x$, then show that $\sin 2x = \frac{e^{2ix} - e^{-2ix}}{2i}$.
- Q2. If $e^{2ix} = \cos 2x + i \sin 2x$, then show that $\cos 2x = \frac{e^{2ix} + e^{-2ix}}{2}$.
- Q3. Show that $\left\{ \frac{n\pi}{2} \right\}_{n \in \mathbb{Z}}$ is the solution set of equation $\cos z = 0$.
- Q4. Prove that $1 + \tan^2 z = \sec^2 z$ for all $z \in \mathbb{C}$.