NAME :

Quiz 1

1. Consider $\sigma = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 2 & 3 & 4 & 5 & 1 & 7 & 6 & 8 \end{pmatrix} \in S_8$.
   (a) Decompose σ in disjoint cycles.
   (b) Compute $\sigma^2, \sigma^5,$ and σ^{10}.
   (c) Compute σ^{2026}.

2. Let $n \geq 2$. Consider $G = \{z \in \mathbb{C},\ z^n = 1\}$. Show that G is a subgroup of $(\mathbb{C}, \times)$ (usual complex multiplication).