

系所：_____ 學號：_____ 姓名：_____ (5/8)

Explain why a group (G, \cdot) is cyclic, if $|G|$ is prime.

Sol. Suppose $a \in G$ and $a \neq e$.

**Then, $|\langle a \rangle| > 1$, which implies $|\langle a \rangle| = |G|$ (i.e., $\langle a \rangle = G$),
as a consequence of Lagrange's theorem.**

Therefore, a is a generator of G .