${\bf Homework\text{-}6}$

- 1. Show that S_n is generated by $\sigma = \begin{pmatrix} 1 & 2 \end{pmatrix}$ and $\tau = \begin{pmatrix} 1 & 2 & 3 & \dots & n \end{pmatrix}$.
- 2. Find the center of S_n and D_n for $n \geq 3$.
- 3. Let G be a simple group of order 60. Show that $G \cong A_5$.