

# MAU22101: Exercises Week 7

---

**Problem 1** Let  $G$  be a group of order 330. Show that  $G$  has a normal subgroup  $H \triangleleft G$  of order  $|H| = 11$ .

**Problem 2** Exhibit all Sylow 3-subgroups of  $S_4$ .

**Problem 3** Find the number of Sylow 2- and Sylow  $p$ -subgroups of  $D_{2p}$ .