

**Math 421 Problem Set 23**  
**November 29, 2022**

1. Find all conjugacy classes (and their sizes) in the following groups.
  - (a)  $D_8$
  - (b)  $Q_8$
  - (c)  $A_4$
  - (d)  $Z_2 \times S_3$
  
2. Find all groups with exactly two conjugacy classes.