Third Homework
Due 10:10 a.m., Monday February 11

1. Let $\rho : G \to \text{GL}(d, \mathbb{C})$ be a finite dimensional irreducible representation of the group $G$, and let $z \in Z(G)$ (the center of $G$). Prove that $\rho(z) = \lambda I_d$ (where $I_d$ denotes the $d \times d$ identity matrix) for some nonzero $\lambda \in \mathbb{C}$. (4 points)

2. Exercise 2.3 on page 27. (5 points)

3. Exercise 2.8 on page 29. (4 points)

(3 problems, 13 points altogether)