Problem Set 2

Due: Friday, February 19 at 11 AM in the Pset boxes outside room 4–174

- Chapter 10, Exercise 6.2
- Chapter 10, Exercise 6.5
- Chapter 10, Exercise 6.8 (you may use the character tables of the tetrahedral and icosahedral groups in 10.4.14 and 10.6.14, respectively, but you’ll have to figure out how $T$ is a subgroup of $I$)
- Math 18.712 lecture notes from OCW, problem 4.34 parts (a), (b), (c)

To make things easier, I’ll tell you how to interpret this last problem: except for the unit, the icosahedral group has four conjugacy classes (see the table in 10.6.14) whose elements have orders 2, 3 or 5.

- Pick an element $x$ in each conjugacy class, and find its order $d$
- Induce the trivial one-dimensional representation from the subgroup $\mathbb{Z}/d\mathbb{Z} \subset I$ generated by $x$
- Break up the resulting representation of $I$ into irreducible representations