HOMEWORK 1 - MATH402B

DUE: WEDNESDAY OCTOBER 4TH

(1) Read the file *Tetrahedron* (available here: http://sites.math.washington.edu/ aturchet/teaching/aut2017/402/tetrahedron.pdf).

(2) Adopt the notation of figure 1.4 in the "Tetrahedron" file. Show that the axis of the composite rotation srs passes through the vertex labeled 4, and that the axis of $rsrr$ is determined by the midpoints of the edges $\overline{12}$ and $\overline{34}$.

(3) Using the previous exercise, express each of the twelve rotational symmetries of the tetrahedron in terms of r and s.

(4) Goodman 1.3.1

(5) Goodman 1.3.2

(6) Goodman 1.3.3

(7) Goodman 1.4.2

(8) Goodman 1.4.8

(9) Goodman 1.10.1

(10) Goodman 1.10.2