Math 417: Homework 8
Due Friday, October 29, 2021

1. Goodman, exercise 3.2.2.

2. Goodman, exercise 3.2.4.

3. Goodman, exercise 3.2.5.


5. The symmetric group $S_n$ acts naturally on the set \{1,2,…,n\}. Let $\sigma \in S_n$, and let $\langle \sigma \rangle \leq S_n$ be the subgroup generated by $\sigma$. Explain the relationship between

   (a) the orbits of the action of $\langle \sigma \rangle$ on \{1,2,…,n\}, and
   (b) the disjoint cycle decomposition of $\sigma$.

   (This is a reformulation of Goodman’s exercise 5.1.3)

6. Goodman, exercise 5.1.5.


8. Goodman, exercise 5.1.7.