Reading Questions 19

page 99: Example 4.40

- 1. The matrices A and B are similar if there exists a matrix P such that AP = PB.
- 2. An elementary matrix is an invertible matrix.
- 3. List the two actions given in the example for $P \cdot A$.

Section 4.4 Orbits (Part 2)

More Examples

P 1. Show $\operatorname{GL}(n,\mathbb{R})$ acts on $\operatorname{M}_{n\times n}(\mathbb{R})$ where $P \cdot A = PA$ for $P \in \operatorname{GL}(n,\mathbb{R})$ and $A \in \operatorname{M}_{n\times n}(\mathbb{R})$.

P 2. Write $\begin{bmatrix} 1 & 3 & 2 \\ 0 & 1 & 2 \\ 0 & 0 & 3 \end{bmatrix}$ as a product of elementary matrices.

P 3. What are the conjugacy classes of S_4 ?

P 4. Let $(1432), (1324) \in S_4$. Find $\sigma \in S_4$ such that $(1432) = \sigma(1324)\sigma^{-1}$.