

MA 453 HW #9 Solutions.

§8.3 #4. Yes, $X_1 X_2 X_3$

§8.4 #2.
$$\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 5 & 3 & 4 & 7 & 1 & 6 & 2 & 9 & 8 \end{pmatrix} = (1\ 5)(2\ 3\ 4\ 7)(8\ 9)$$

$$= (1\ 5)(2\ 3)(3\ 4)(4\ 7)(8\ 9) \quad \therefore \text{odd}$$

#6. $(1), (1\ 2\ 3), (1\ 3\ 2)$.

§9.1 #2. $G = \{ \text{all the odd permutations} \}$ does not include identity permutations.

$\therefore G$ is not a group. \therefore

§9.2 #10 No

$\therefore \nexists 0 \in \mathbb{R}^t \quad \forall: \quad 0 + a = a + 0 = a \quad \forall a \in \mathbb{R}^t.$