1. Let $G$ be an abelian group, $H \leq G$.
   (a) Prove that $G/H$ is an abelian group.
   (b) Show that the converse does not hold. That is, find a group $G$ and a normal subgroup $H$ such that $G/H$ is abelian but $G$ is not.

2. Problem number 13 on page 152 of your text.

3. Let $G$ be a finite group, $H \triangleleft G$. Show that if $a \in G$ is such that $aH$ has order $n$ in $G/H$, then there is an element in $G$ with order $n$.

4. Problem number 30 on page 153 of your text.