Math 547
Problem Set #3

1. Let $\sigma = (1, 2, 3)(4, 5) \in S_6$. Find five elements of $S_6$ that are conjugate to $\sigma$. Can you make a guess as to what the conjugacy class of $\sigma$ is equal to?

2. Let $\sigma = (1, 2)(3, 4)(5, 6) \in S_6$. Find five elements of $S_6$ that are conjugate to $\sigma$. Can you make a guess as to what the conjugacy class of $\sigma$ is equal to?

3. Let $A$ be a normal subgroup of the group $G$. Show that for every element $a$ of $A$, $cl(a) \subseteq A$ (where $cl(a)$ denotes the conjugacy class of $a$ in $G$.)