1. Write the contrapositve of the following statement: *(6 points)*

You can play the piano only if you have practiced.

2. Determine if the following argument is valid by converting it to symbolic notation and using a truth table. (*7 points*)

If our oil supply is cut off, our economy collapses. If we go to war, our economy doesn't collapse. Therefore, if our oil supply is cut off, we do not go to war.

3. Suppose that our universal set is the lower case letters of the alphabet, $U = \{a, b, c, ..., z\}$, that $A = \{a, c, e, g, i, k, n\}$ and $B = \{a, d, g, j, m\}$. Find the set $A \cap B'$. (7 points)