1. (30 points) Let $M$ be the PDA in Example 7.1.3 on page 226. $M$ accepts even length palindromes. Show the computation trees for the strings $aabb$ and $aba$.

2. (60 points) Construct PDAs that accept each of the following languages. Explain how the PDA works: write the algorithm it follows, label the specific portions of the machine with the task performed.
   a. $\{a^ib^j \mid 0 \leq i \leq j\}$
   b. $\{a^ib^jc^k \mid i, j, k \geq 0 \text{ and } i + k = j\}$

3. (10 points) Let $M$ be the TM in Example 8.2.2 on page 261 (the machine for $a^ib^jc^i$). Show the computation sequence for the strings $abc$ and $aabc$. 