1. (40 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 $aabbaa$ and $aba$.

$$
\text{M:} \quad \begin{array}{c}
\text{b / B} \\
\text{a / A} \\
\lambda / \lambda \\
\lambda / \lambda \\
\lambda / \lambda \\
\lambda / \lambda \\
\end{array}
$$

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. $\{a^i b^j | 0 \leq i \leq j\}$
   b. $\{a^i b^j c^k | i, j, k \geq 0 \text{ and } i + k = j\}$