CS3311 Homework 11   Due date: Wednesday, November 30, 2016 in class

The answers must be the original work of the author. While discussion with others is permitted and encouraged, the final work should be done individually. You are not allowed to work in groups. You are allowed to build on the material supplied in the class. Any other source must be specified clearly.

1. *(40 points)* Let M be the TM in Example 8.2.2 on page 261 (the machine for $a^i b^i c^i$). Show the computation sequence for the strings abc and $aabc$.
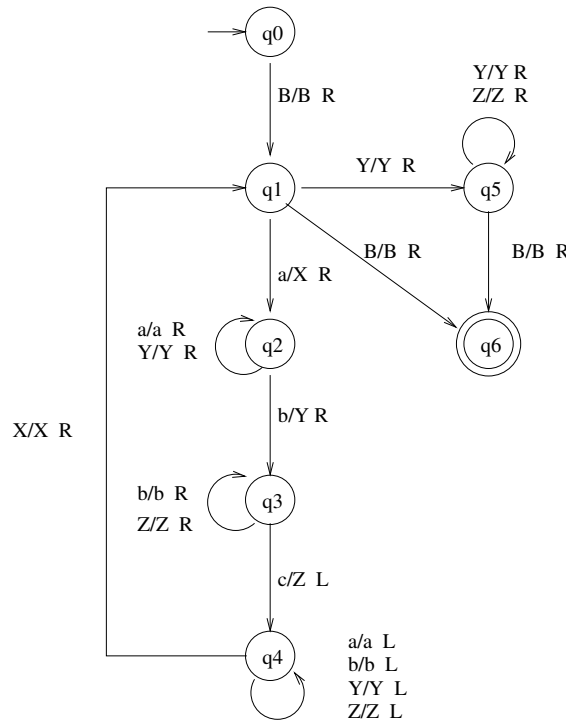
2. *(60 points)* Construct TMs that accept the following languages. Write the high-level algorithm executed by the machine and label the sections.

(a) The set of strings over $\{a, b, c\}$ that begin with 'a', contain exactly two 'b's, and end with 'cc'.

(b) $\{a^i b^j c^k \mid i + j = k\}$

(c) $\{ww \mid w \in \{a, b\}^*\}$