

**Homework Assignment #8**  
**Due: November 24, 4:00 p.m.**

1. Let  $L = \{0^i 1^j 2^k : i < j < k\}$ . Is the language  $L$  context-free? Prove your answer is correct.
2. Let  $L$  be the set of all binary strings that contain more than twice as many 0's as 1's. For example 1011000010000 is in  $L$  since there are 9 0's in the string and 4 1's and  $9 > 2 \cdot 4$ . Draw the transition diagram of a PDA that accepts  $L$ . You do not have to give a formal proof that your PDA is correct, but give a high-level explanation of how it works in a couple of sentences.