

**Weekly Proof #1 Questions (Section 1.1)**

**Assigned: 1/13/2015**

**Due: 1/15/2015 (in class)**

**For each of the following regular languages over the alphabet  $\{0, 1\}$ , (1) Draw a DFA that accepts the language, and (2) Explain what each state in your diagram represents and use this to justify the correctness of your DFA design.**

a)  $L_a = \{ w \mid w \text{ starts with } 11 \text{ or ends with } 00 \}$

b)  $L_b = \{ w \mid w\text{'s decimal equivalent is divisible by } 6 \}$

c)  $L_c = \{ w \mid w \text{ doesn't contain the substring } 110 \}$