Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*No calculators are allowed.* Show your work. The points for each problem are indicated. Problems with incomplete work may receive partial, or no credit.   
***COs: [Question 3 fulfills Course Outcome 4 for CIS 306]***

**Points: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ / 15**

1. [5 pts] Given an alphabet, Σ = {x, y, z}, list all strings of length 1 to 3   
   in the language L = (x + y + z)\*
2. [5 pts] Let the alphabet Σ = {a, b}. Given the regular expression r = (a + b)\*bb, assume a language L(r) is the language defined by the regular expression r. Explain in English what accepted strings in the language are like.
3. [5 pts] Design and draw the transition diagram of a finite automaton (FA) for the regular language above, in question 2