Assignment 1
L445/L545/B659
Due Thursday, January 28

1. (a) For each regular expression in (i)-(iii), indicate which ones of the following strings it matches:

   a        ab        bd        acd
   b        ac        cd        bcd
   c        ad        abc       abcd
   d        bc        abd

   i. /a|bc?\d/
   ii. /b.*c\b/
   iii. /b[ab]?[^c]\b/

(b) For each description, write a regular expression to match it (and no other elements):

   i. ab, bb
   ii. ab, bb, anb, bnb
   iii. ab, bb, anb, bnb, abb, bbb, abnb, bbbb, abbbb, abbbnb, bbbnb, abbb, bbbbb, abbbnb, ...

2. For the regular expression you wrote in (1biii),
   (a) give a formal definition of a deterministic finite-state automaton (DFSA) (cf. slides 19-22).
   (b) draw the corresponding finite-state transition network (FSTN).

3. Do question #2.4 from Jurafsky & Martin (p. 43), regarding English (absolute) dates.

4. Do question #2.5 from Jurafsky & Martin (p. 43), regarding English (deictic) dates.

5. Do question #2.8 from Jurafsky & Martin (p. 44), regarding writing a regular expression for an NFSA.