CS585 JK CFG exercise, 11/5/15 Name: _____

Consider a 4 POS tag system

N: common noun OR proper noun
A: adjective
P: preposition
D: determiner (the,this,that)

Here are three classes of noun phrases. For each,

1. Write a rule system that can parse all of them as the nonterminal **N'**
   (called "N-bar" in "x-bar" syntactic theory)
2. Write the parse tree for each of the given tag sequences

Class 1

N car
AN red car
AAN big red car
ANN full cabinet drawer
…
(A >= 0 times) (N >=1 times)
a.k.a. A* N+

Make sure to exclude:
[bad!] NA
[bad!] NAAN
[bad!] A

Class 2

NPN car with passengers
ANPN red car with zest
NPAN car with awesome crap
…
A* N+ P A* N+

Make sure to exclude:
[bad!] NPPN
[bad!] NPA
[bad!] APN

Class 3

NPDN
soup with the salad
NPDAN
soup with the good salad
…
Make sure to exclude:
[bad!] NPDDN
[bad!] NPDADN