Physics of Music
PHYS 102

Homework 4
*due March 31ᵗʰ **before** class*

1. For the first four resonant modes of a stretched string 100 cm long:

   a) Draw the standing waves for each and label the nodes (N) and antinodes (A)
   b) Label each mode by its harmonic number and its frequency relative to the fundamental frequency f_1 of the string

   2. For the first four resonant modes of a closed tube 345 cm long in air:

   a) Draw the graph of the pressure for each standing wave and label the nodes (N) and antinodes (A).
   b) Find the frequencies of each of those notes
   c) Looking at the appendix of the Berg & Stork find the names of the notes they correspond to (the notes more closely matching the frequencies you find).