Network Problems Friday Night

- If this affected you . . .
  - Make sure you submit ASAP if you haven’t already
  - Send me an email
    - If you already sent an email and I haven’t responded, I didn’t get it! Send again

- In the future
  - Submit as soon as you can, let me know
Labs

- If you did the standing waves in air lab before class on Monday, you should re-do it (the equipment was set up incorrectly)
A string fastened at both ends has a length of one meter. What is the wavelength of the 1\textsuperscript{st} harmonic?

A. 4 m  
B. 0.5 m  
C. 1 m  
D. 0.666 m  
E. None of the above
The sound you hear from a violin is produced by . . .

- A standing wave in the string
  - fundamental determines the pitch
  - harmonics determine the sound quality
The sound you hear from a violin is produced by . . .

- A standing wave in the string
  - fundamental determines the pitch
  - harmonics determine the sound quality

- The bridge transfers the wave to the violin cavity which couples the oscillation to the air
A pipe open at both ends has a length of 1.0 m. Two possible wavelengths for standing waves are

A. 4 m and 2 m
B. 3 m and .5 m
C. 2 m and .66 m
D. 3 m and .66 m
E. 3 m and 2 m
Wind instruments -

Air in a pipe open at both ends
Air in a pipe closed at both ends
The fundamental (longest possible) wavelength for a sound wave in a pipe that is open at both ends will be ___________ that of a pipe of equal length but open at one end and closed at the other.

A. double
B. the same

✓ half
Air in a closed ended pipe
Wind instruments -

Air in a closed end pipe

- one end closed and one end open
- Only odd harmonics
- $n = 1, 3, 5, 7, \ldots$

College is where you go to have your answers questioned.

- Ephesians 4:14 That we henceforth be no more children, tossed to and fro, and carried about with every wind of doctrine, by the sleight of men, and cunning craftiness, whereby they lie in wait to deceive;
"Don't take a fence down until you know why it was put up." John F. Kennedy paraphrasing Gilbert K. Chesterton

The gate or fence did not grow there. It was not set up by somnambulists who built it in their sleep. It is highly improbable that it was put there by escaped lunatics who were for some reason loose in the street. Some person had some reason for thinking it would be a good thing for somebody. And until we know what the reason was, we really cannot judge whether the reason was reasonable. It is extremely probable that we have overlooked some whole aspect of the question, if something set up by human beings like ourselves seems to be entirely meaningless and mysterious. There are reformers who get over this difficulty by assuming that all their fathers were fools; but if that be so, we can only say that folly appears to be a hereditary disease.
A pipe closed at one end has a length of 1.0 m. Two possible wavelengths for standing waves are:

A. 4 m and 2 m
B. 1 m and .5 m
C. 2 m and .66 m
D. 4 m and 1.33 m
E. None of the above
An organ pipe of length 3.0 m has one end closed. The two longest possible wavelengths for standing waves inside the pipe are

A. 6m and 3m
B. 12 m and 6 m
C. 12 m and 4 m
D. 9 m and 6 m
E. None of the above

E. None of the above
You change the frequency as you excite a tube and find some resonant frequencies at 510, 850, and 1190 Hz. There may be other frequencies but not in this range. Is this an open-open pipe, or a closed-open pipe?

A. Open-open pipe
B. Closed-open pipe
C. Could be either
You change the frequency as you excite a tube and find some resonant frequencies at 204, 306 and 408 Hz. There may be other frequencies but not in this range. Is this an open-open pipe, or a closed-open pipe?

A. Open-open pipe

B. Closed-open pipe

C. Could be either

What else could it be?