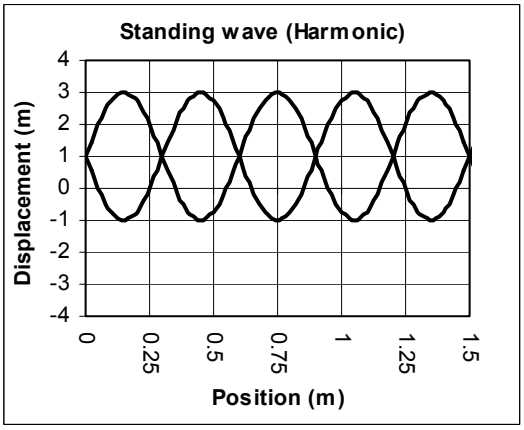
PreAP: Due: Tues., 7 (Assigned: Fri., Mar 3)

Harmonic Review 3 – Regulars Only

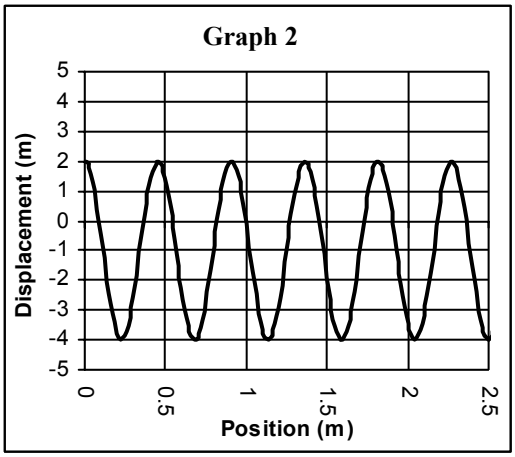
1. Use the standing wave at the right to answer the following.
   A. How many wavelengths is this harmonic?
   B. If this was a sound wave, find its frequency.



   C. Can we hear it's frequency?
   D. Is it a high or low note?
   E. Amplitude = _____ E. Period = _____
   F. Where is its equilibrium position?
   G. Where will it come to rest?
   H. In order to start the wave moving you must d_____ it.
   I. Find the fundamental frequency for this space.

   J. Find the wavelength of the fundamental for the space on graph 1.

2. Use the graph at the side to answer the following.
   A. Amplitude =
   B. Where will it come to rest?
   C. Find its wavelength.



   D. If a sound wave, find its frequency.

   E. How long would it take to complete 150 cycles?

   F. If Graph 2 is a sound wave mark compression and rarefaction on it (see notes on sound).

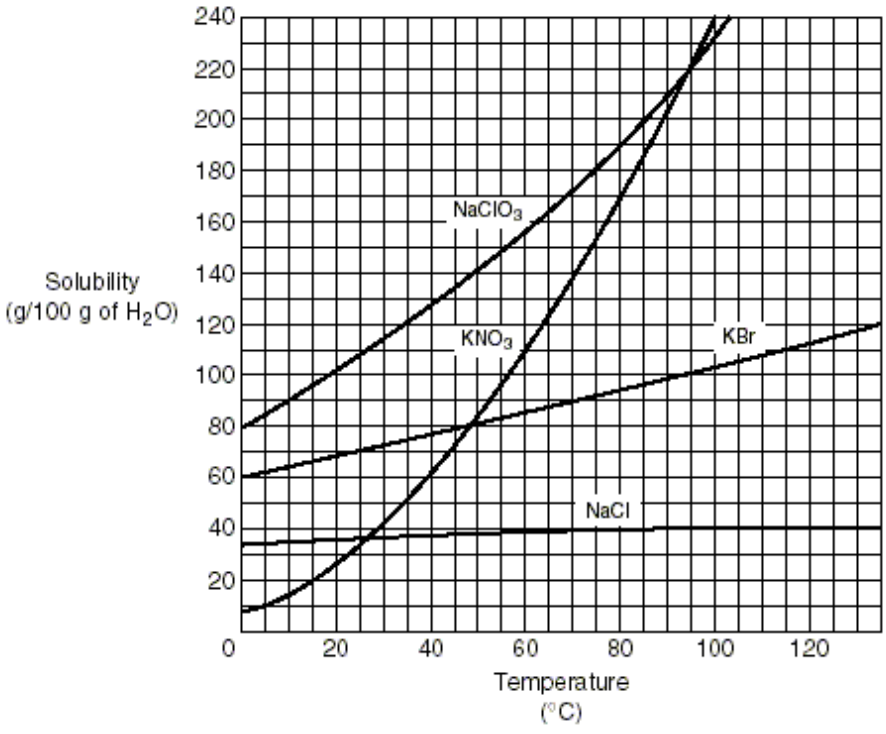
3. How many grams of potassium bromide is saturated at 95° C?

4. If you tried to put 140 g of KBr into 100 mL of H_2O, at 95° C how much would precipitate out?

5. How much sodium chlorate can you put into 100 g of H_2O at 35° C?

6. So how much sodium chlorate can you put in 550 g of H_2O at 35° C?

7. How much table salt can 340 g of H_2O hold at 65° C?



8. Which of the following will change the speed of a wave?
   A._____ Change the harmonic?
   B._____ Change the length of the space?
   C._____ Grab a harmonic at one of the nodes?
   D._____ Tighten the string?
   E._____ Change the string with a string of different mass or thickness?
   F._____ Disturbing the string farther (more amplitude)?
   G._____ Change the temperature of the medium?

9. A pendulum has a period of 1.2 seconds, find its length.

10. A pendulum of length 45 cm has a known period of 0.76 seconds. It is taken to a different planet. Find the force of gravity on the pendulum.

11. A spring is suspended from the ceiling. A 500 g mass is hooked to the spring, which stretches 18 cm. Find its spring constant.

12. A spring has a spring constant of 35 N/m. If a 300 g mass is hooked to it, how far will it stretch?

13. Using the same spring as in #12 above, after it is stretched by the mass, how much force is necessary to pull it an additional 4 cm?