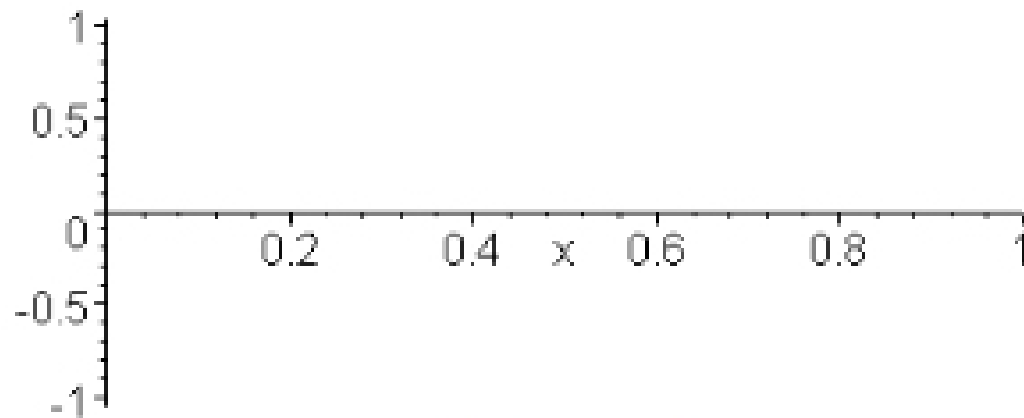
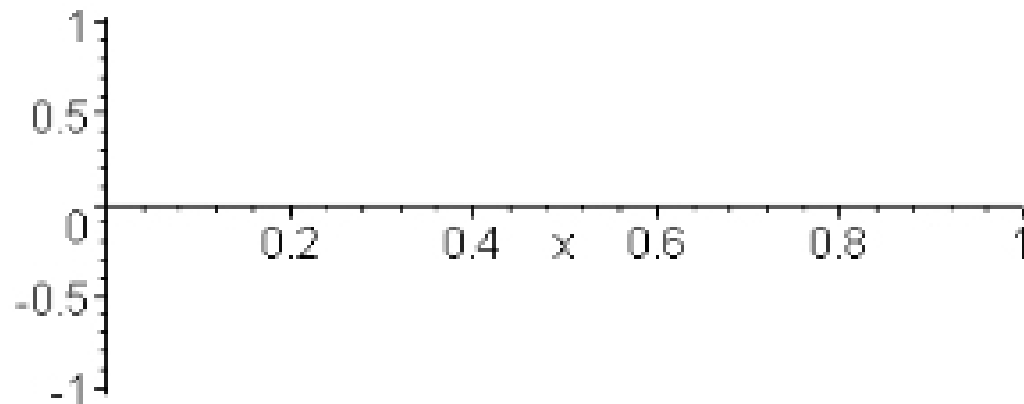
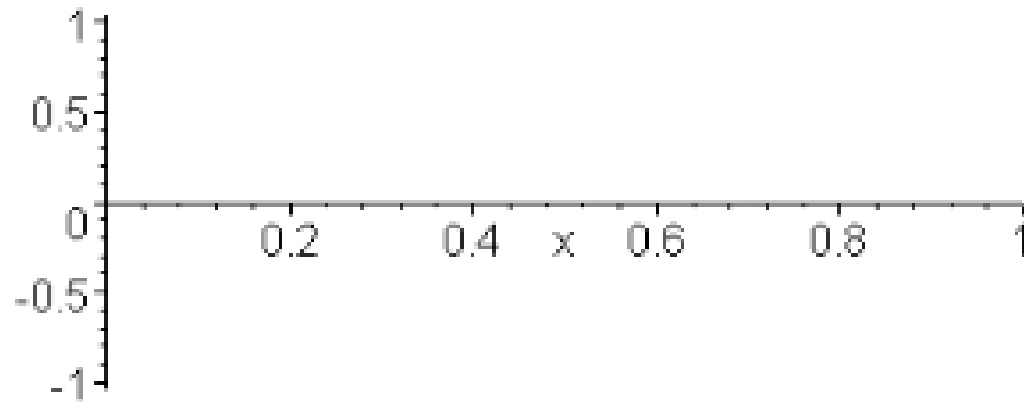


Physics and Music

PHY103

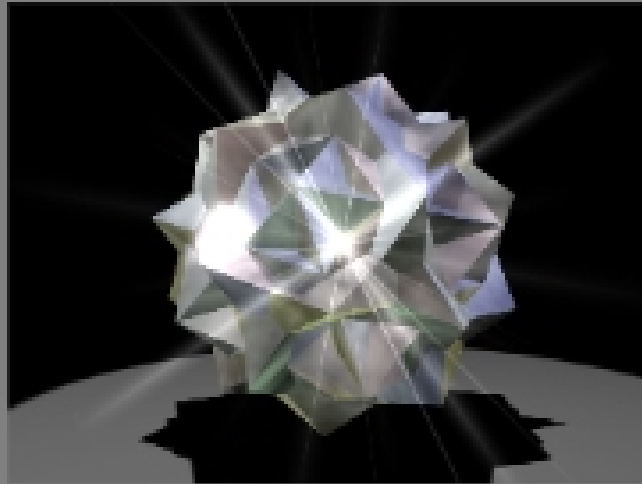
Approach for this class

Lecture 1

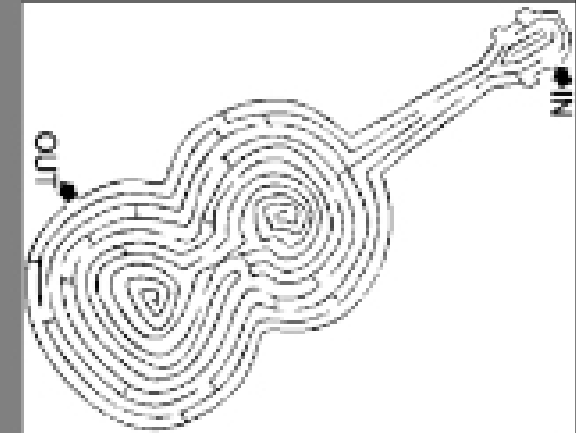


Animations from

<http://physics.usask.ca/~hirose/ep225/animation/standing1/images/>



What does



Physics have to do with *Music*?

1. Search for understanding of the natural world
Quantitative theory. Physics provides a framework.

Linear 1D Wave equation describing waves on a guitar string
has solutions that are traveling waves with speed $c = \sqrt{T / \rho}$

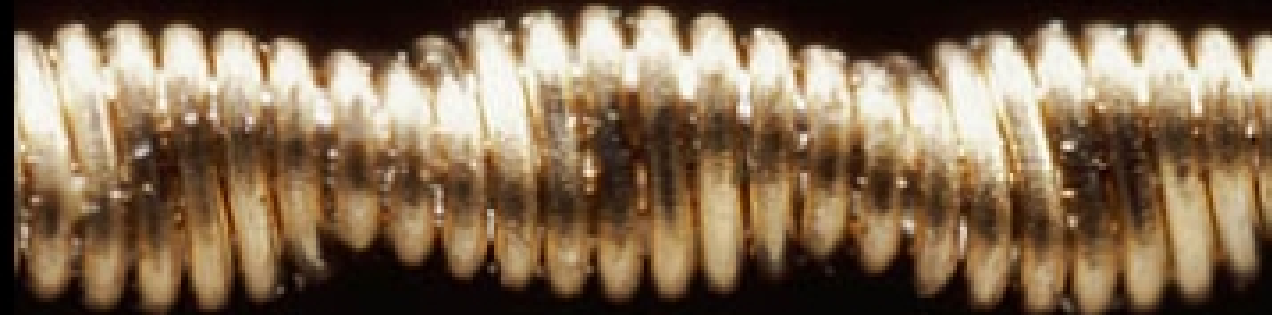
Using this you can predict the pitch of a string and how it
depends on string density and tension.

However, if one tries to take into account other physical effects
you get equations lacking simple solutions.

2. Method of Experimental Enquiry

For example: By experimenting with different kinds of strings you might better understand what affects the damping time, “warmth” of tone, and durability.

Different scenarios and explanations can be tested via experiment.



An advertisement for Elixir guitar strings. The background is a deep purple. On the left, a vertical strip shows a close-up of a guitar string with a white and gold braided coating. On the right, the brand name 'Elixir' is written in a large, elegant, gold-colored script font. Below it, in smaller white capital letters, is 'GUITAR STRINGS FROM GORE'. At the bottom right, two lines of white capital text read: 'YOU MAKE GREAT MUSIC.' and 'WE MAKE GREAT MUSIC LAST LONGER.'