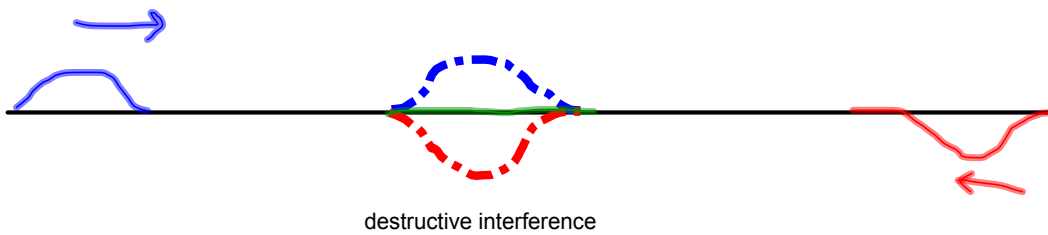
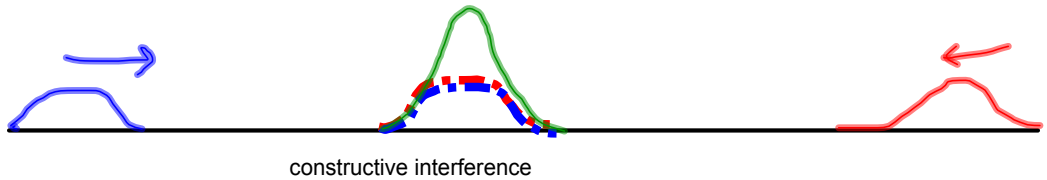


Wave Interference

When two waves meet, the displacements of the particles from each individual wave are added together to create one wave form.

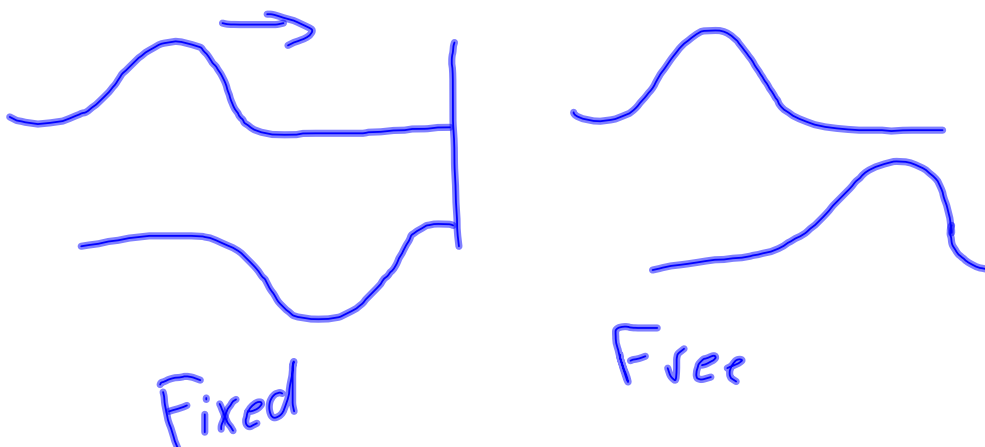
This is called the superposition principle.



Wave Reflection

When a wave hits a **FIXED** end, it reflects upside down.
(This is called a phase change.)

When a wave hits a **FREE** end, it reflects on the same side.
(stays in phase).



A Special Case of Interference

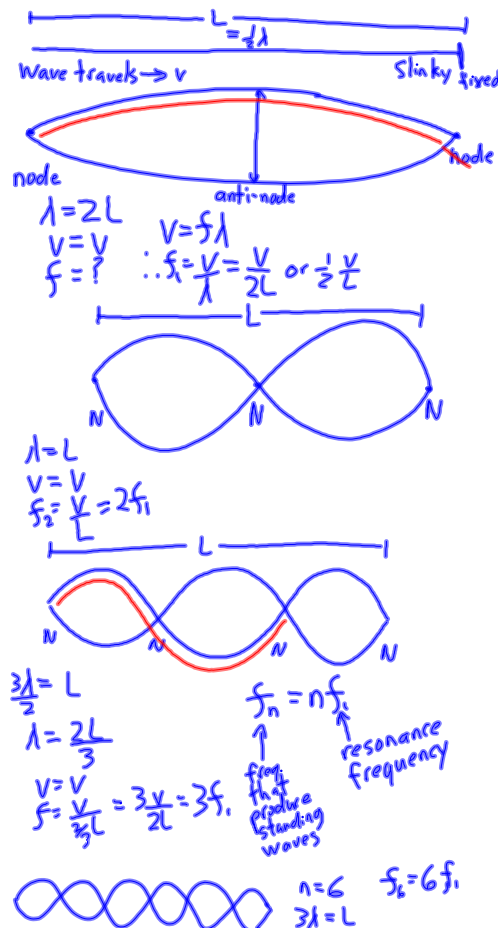
Consider what happens when a wave is incident on a fixed end. The reflected wave will interfere with the incident (incoming) wave.

<http://www.walter-fendt.de/ph14e/stwaverefl.htm>



The resulting wave is called a standing wave

Notice that the wave alternates between moments of constructive interference and destructive interference. Both the troughs and the crests are twice as high as the original wave. (Thus, the amplitude is twice as large.)



Resonance Frequency:

When an object vibrates at its resonance frequency, the amplitude of its vibrations drastically increase.

Every object has its own resonance frequency. When it is oscillated at this frequency, it will vibrate with a larger amplitude than usual. This is called mechanical resonance.