

# Physics 2010 Jeopardy!

	<b>Awesome Oscillators</b>	<b>Mostly Math</b>	<b>Catch a Wave</b>	<b>Give It a Wave Now</b>
<b>100</b>	What's a linear restoring force	Given a frequency $f=1\text{MHz}$ , this is the period...	This word describes the fact that waves can add together	A wave is incident on a flat surface, at an angle of $50^\circ$ . At what angle does the reflected wave leave?
<b>200</b>	DD: Draw a graph showing Hooke's Law for a spring constant $k=2\text{N/m}$ .	This is an equation relating $v$ , $f$ & $\lambda$	What is Huygens' Principle?	Constructive interference happens when...?
<b>300</b>	Why is SHO relevant for systems other than masses on springs?	Given a wave speed of $343\text{m/s}$ , what freq. has a $\lambda$ of the width of a human head ( $12\text{cm}$ )?	a) What word refers to the phenomena of waves bending around corners? b) Are large or small $\lambda$ 's more likely to do this?	True or False: Where sound waves hit a wall, the pressure is zero and the displacement is a maximum.
<b>400</b>	What occurs when the freq. of the driving force equals the natural freq. of the oscillating system?	What's the phase difference between $x(t)=A\cos(\omega t)$ and $x(t)=A\sin(\omega t)$ ?	What's one property transverse waves have that longitudinal waves don't?	At a distance of $10\text{ft}$ from a speaker, a sound has intensity $I_1=10^{-6}\text{W/m}^2$ . Then you back up to $30\text{ft}$ . What is the new intensity you hear?
<b>500</b>	Given $k$ & $m$ , what is the period $T$ ?	Given power $P$ , how does the amplitude scale? ( $A \propto ?$ )	Why do waves approaching a beach become parallel to the shore?	Two tones of equal amplitude are playing. One is $f_1=100\text{Hz}$ , the other is $f_2=101\text{Hz}$ . a) What is the beat frequency? b) What is the freq. you hear?