Chapter 12 Sound

INTENSITY OF A SPHERICAL WAVE *This equation assumes that there is no absorption in the medium.*	$\text{intensity} = \dfrac{P}{4\pi r^2}$
HARMONIC SERIES OF A VIBRATING STRING OR A PIPE OPEN AT BOTH ENDS	$f_n = n\dfrac{v}{2L} \quad n = 1, 2, 3, \ldots$
HARMONIC SERIES OF A PIPE CLOSED AT ONE END	$f_n = n\dfrac{v}{4L} \quad n = 1, 3, 5, \ldots$
BEATS	frequency difference = number of beats per second

Chapter 13 Light and Reflection

SPEED OF ELECTROMAGNETIC WAVES *This book uses the value $c = 3.00 \times 10^8$ m/s for the speed of EM waves in a vacuum or in air.*	$c = f\lambda$
LAW OF REFLECTION	angle of incidence (θ) = angle of reflection (θ')
MIRROR EQUATION *This equation is derived assuming that the rays incident on the mirror are very close to the principal axis of the mirror.*	$\dfrac{1}{p} + \dfrac{1}{q} = \dfrac{1}{f}$
MAGNIFICATION OF A CURVED MIRROR	$M = \dfrac{h'}{h} = -\dfrac{q}{p}$

Chapter 14 Refraction

INDEX OF REFRACTION *For any material other than a vacuum, the index of refraction varies with the wavelength of light.*	$n = \dfrac{c}{v}$
SNELL'S LAW	$n_i \sin\theta_i = n_r \sin\theta_r$