CONSERVATION OF ENERGY	$\Delta PE + \Delta KE + \Delta U = 0$
SPECIFIC HEAT CAPACITY	$c_p = \dfrac{Q}{m\Delta T}$
CALORIMETRY *These equations assume that the energy transferred to the surrounding container is negligible.*	$Q_w = -Q_x$ $c_{p,w} m_w \Delta T_w = -c_{p,x} m_x \Delta T_x$
LATENT HEAT	$Q = mL$

Chapter 10 Thermodynamics

WORK DONE BY A GAS *This equation is valid only when the pressure is constant. When the work done by the gas (W) is negative, positive work is done on the gas.*	$W = PAd = P\Delta V$
THE FIRST LAW OF THERMODYNAMICS *Q represents the energy added to the system as heat and W represents the work done by the system.*	$\Delta U = Q - W$
CYCLIC PROCESSES	$\Delta U_{net} = 0$ and $Q_{net} = W_{net}$
EFFICIENCY OF A HEAT ENGINE	$eff = \dfrac{W_{net}}{Q_h} = \dfrac{Q_h - Q_c}{Q_h} = 1 - \dfrac{Q_c}{Q_h}$

Chapter 11 Vibrations and Waves

HOOKE'S LAW	$F_{elastic} = -kx$
PERIOD OF A SIMPLE PENDULUM IN SIMPLE HARMONIC MOTION *This equation is valid only when the amplitude is small (less than about 15°).*	$T = 2\pi\sqrt{\dfrac{L}{a_g}}$
PERIOD OF A MASS-SPRING SYSTEM IN SIMPLE HARMONIC MOTION	$T = 2\pi\sqrt{\dfrac{m}{k}}$
SPEED OF A WAVE	$v = f\lambda$