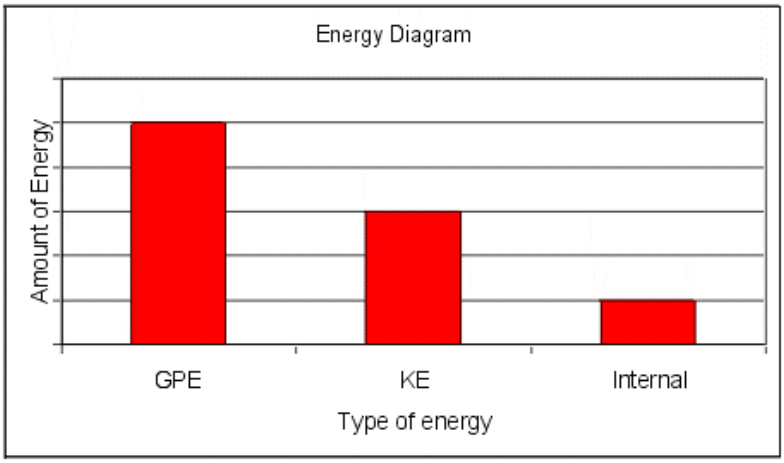
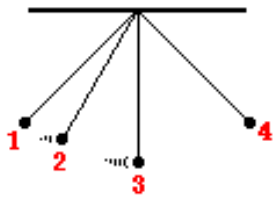
Energy Diagrams

Example 1: Typical energy diagram for a system in which a non-conservative force acts. A snapshot of the system shows that at this point some of the original mechanical energy has been converted to internal energy (heat). Case I

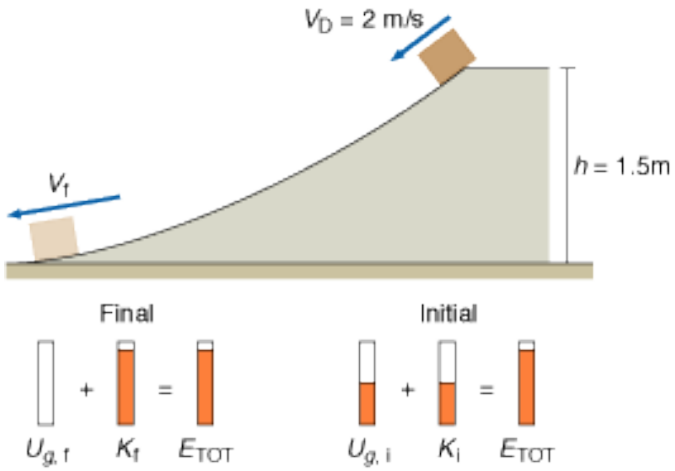


Example 2: Diagram showing the calculation of mechanical energy forms and velocities at different points for an oscillating pendulum. Case II

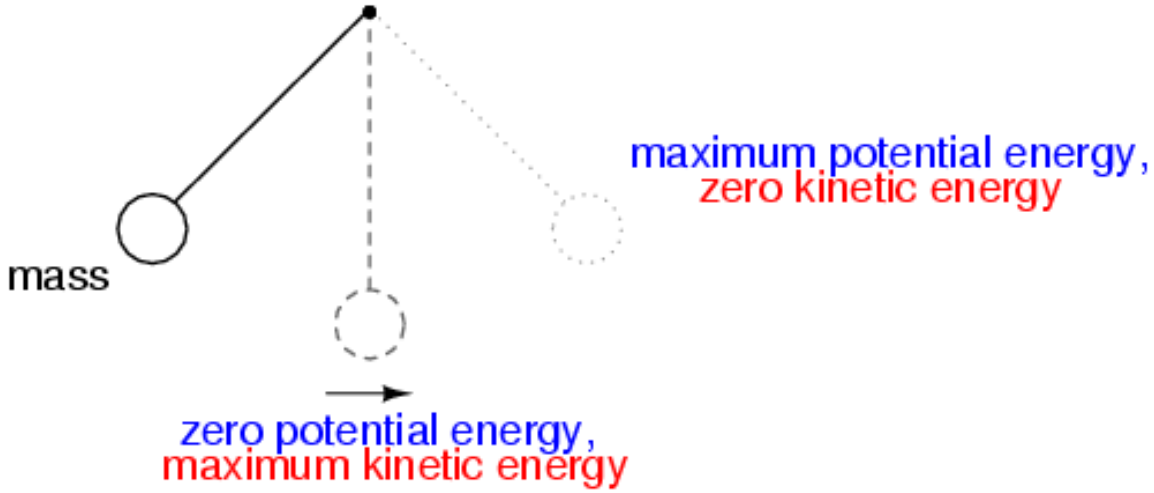


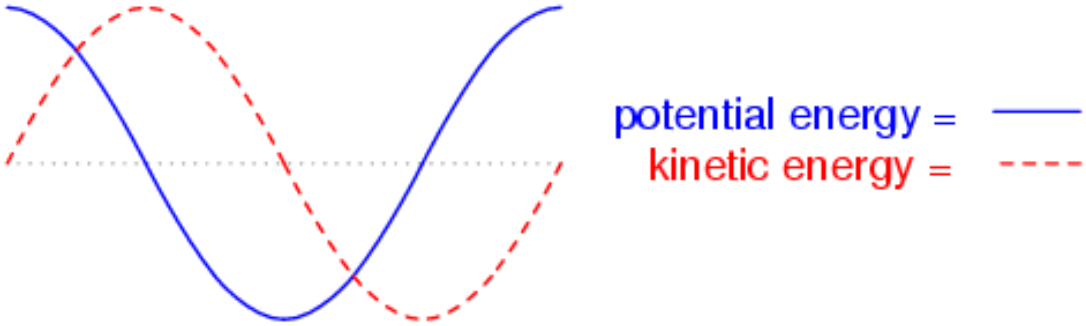
Position 1	Position 2	Position 3	Position 4
PE = 6 J	PE = 3 J	PE = 0 J	PE = 6 J
KE = 0 J	KE = 3 J	KE = 6 J	KE = 0 J
h = A m	h = B m	h = D m	h = F m
v = 0 m/s	v = C m/s	v = E m/s	v = 0 m/s

Example 3: Energy diagrams shown for the initial and final points for a sliding block. Case II

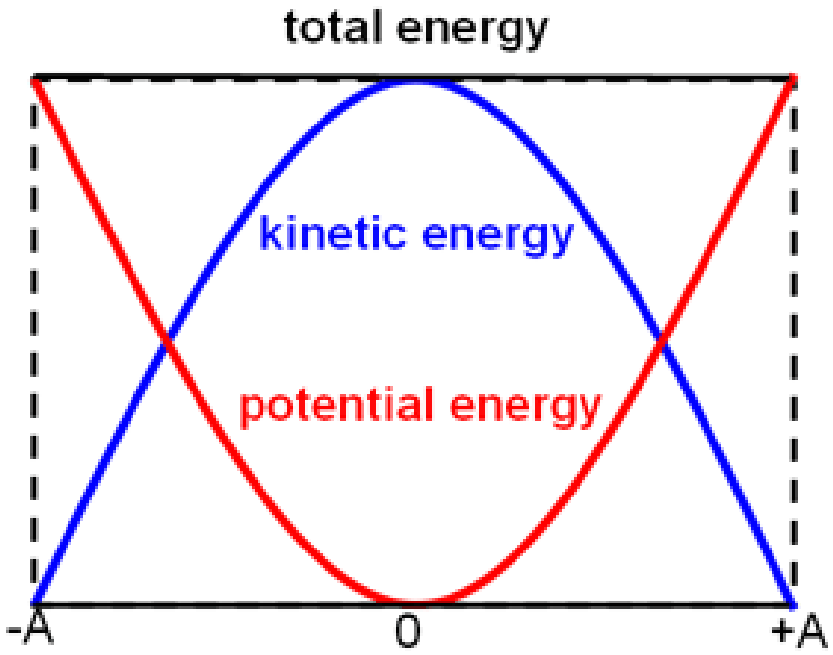


Example 4: Energy diagram showing the kinetic and gravitational potential energies for a vibrating pendulum. Case II

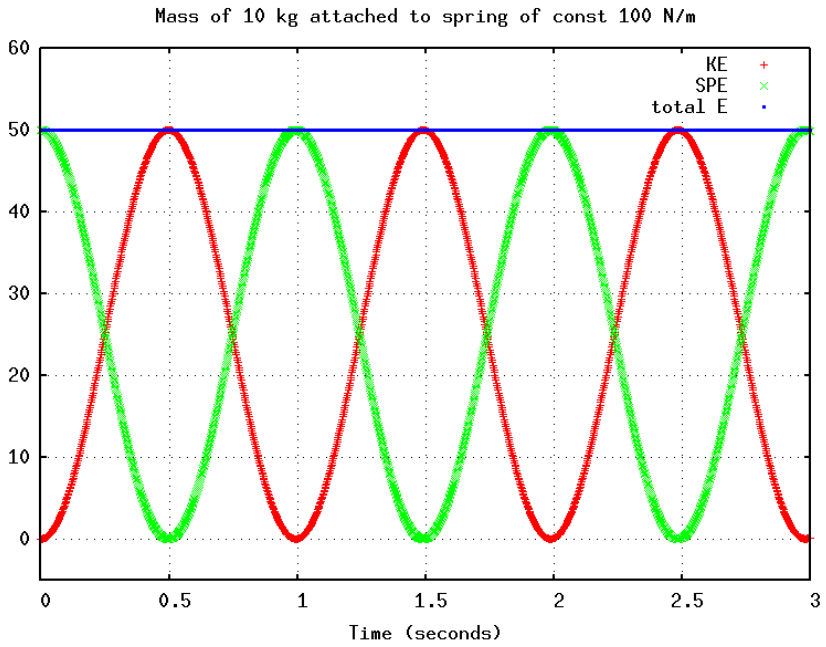




Example 5: Energy diagram for a mass-spring system showing the energy transformation between kinetic and elastic potential as the spring moves back and forth. Case II



Example 6: Energy diagram showing kinetic, elastic potential and total energy as a function of time for a mass-spring system in which only the conservation spring force acts. Case II



Example 7: Energy diagrams for a real pendulum in which non-conservative forces are acting. The nature of the non-conservative force in each case is different; causing causes a difference in the rate at which the total mechanical energy is dissipated in each case. Case I