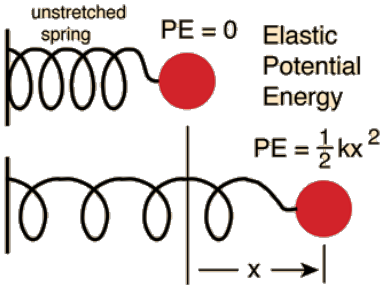
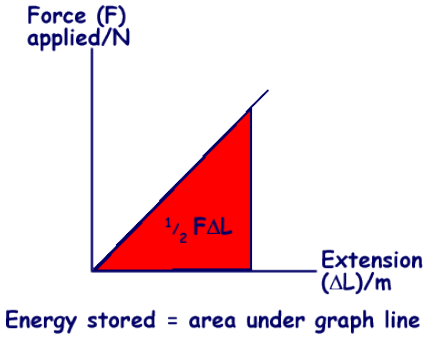
Energy in springs

The energy stored in a spring is called Elastic Energy

Elastic Energy = ½ kx^2, where k is a constant called the spring constant and x is the extension of the spring.





1) What happens to the energy stored in a spring when you double the extension?
2) A spring has a spring constant k=0.5 J/m^2. What is the energy stored when it is stretched by 0.3m?
3) A spring has a spring constant of 15 J/m^2. What energy is stored when it is stretched by 0.03m?
4) A spring (k=0.05 J/m^2) is stretched and stored 15J of energy. How far was it stretched?
5) If the spring in question 4 is used to propel a 0.1kg mass into the air, how high will it reach?