Spring PE

7. The graph below represents the elongation of a spring as a function of the applied force.

Force vs. Elongation
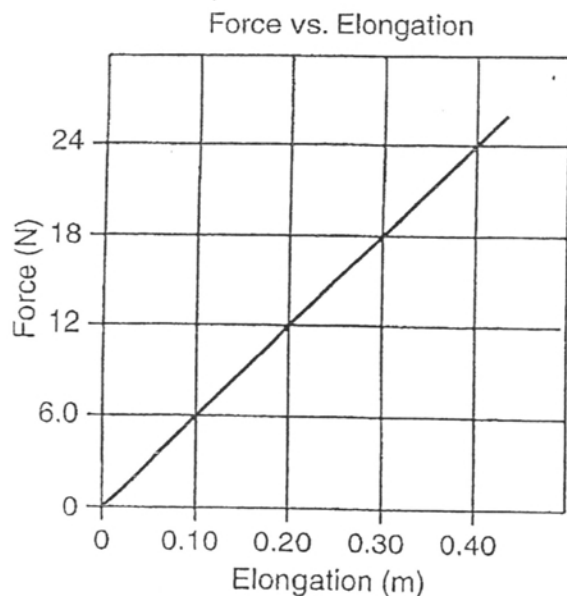
How much work must be done to stretch the spring 0.40 meter?

8. Spring *A* has a spring constant of 140 Newtons per meter, and spring *B* has a spring constant of 280 Newtons per meter. Both springs are stretched the same distance. Compared to the potential energy stored in spring *A*, the potential energy stored in spring *B* is

9. When a spring is stretched 0.200 meter from its equilibrium position, it possesses a potential energy of 10.0 joules. What is the spring constant for this spring?

10. What is the spring constant of a spring of negligible mass which gained 8 joules of potential energy as a result of being compressed 0.4 meter?

11. A spring has a spring constant of 25 Newtons per meter. The minimum force required to stretch the spring 0.25 meter from its equilibrium position is approximately

12. In the diagram below, a student compresses the spring in a pop-up toy 0.020 meter.

Uncompressed spring   Compressed spring
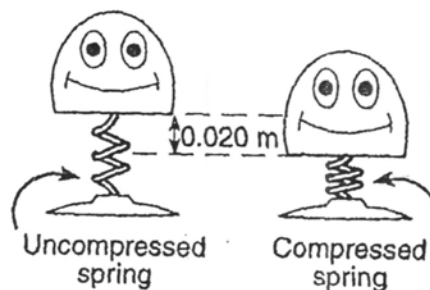
If the spring has a spring constant of 340 newtons per meter, how much energy is being stored in the spring?