1. A 20 kg box is attached to a compressed spring that has a spring constant of 300 N/m. The box is resting on a frictionless surface and the spring is compressed 30 cm. a. What is the EPE of the spring? b. What will be the KE of the box when the spring expands back to its natural length? c. How fast will the box be moving after the spring releases the box?

2. A spring has a spring constant of 256 N/m. How far must it be stretched to give it an elastic potential energy of 48 J?

3. A toy rocket-launcher contains a spring with a spring constant of 35 N/m. How much must the spring be compressed to store 1.5 J of energy?
4. The force constant of a spring is 150. N/m. (a) How much force is required to stretch the spring 0.25 m? (b) How much work is done on the spring in that case?

5. A 5.0 g pellet is placed in the barrel of a toy gun and is propelled by a spring of force constant 50. N/m. The spring is compressed 20. cm and then released. Calculate the maximum velocity of the pellet when shot horizontally.

6. A 10.0 g pebble is placed in a sling shot with a spring constant of 200.0 N/m and is stretched back 0.500 m. What is the maximum velocity the pebble will acquire?