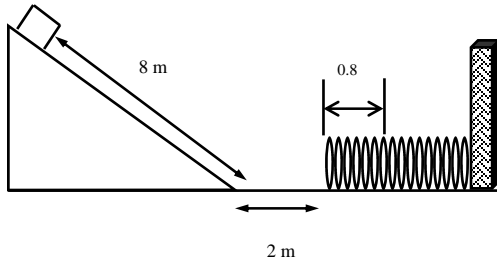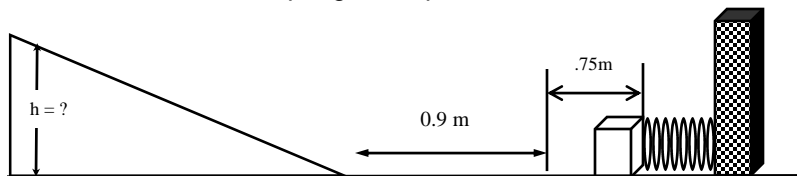1. The spring compresses 0.8 m when the 800 kg crate of llamas hits it. Ignore friction and find the spring constant of the spring. The ramp is at a 47 degree angle.

8 m

0.8

2 m

2. How high will the 80 kg box slide up the 12 degree ramp? The coefficient of friction is 0.05 and the distance from the spring's rest position to the incline is 0.9 m. The spring constant is 600 N/m.

.75m

h = ?

0.9 m

3. A block of mass 2 kg is kept at rest while compressing a horizontal massless spring with a spring constant k = 900 N/m by 20 cm.. As the block is released, it travels on a rough horizontal surface a total distance of 3.2 m before it stops. What is the coefficient of friction?

4. A block of mass 0.25 kg is placed against a horizontal spring of constant k = 5000 N/m and is pushed until the spring is compressed by 0.1 m. If the spring is then released, how far along a wood table will the block travel before coming to a rest? The coefficient of friction is 0.3.