Hooke's Law- HW Problems

1. A force of 80N is required to hold a spring that has been stretched from a rest length of 10 cm to 15 cm. How much work is done stretching the spring from 15 cm to 20 cm?

2. A force of 600 lbs is needed to hold a spring compressed 3 in from its natural length of 18 in. Find the work done to compress this spring an addition 3 inches.

3. A force of 240N is required to hold a spring that has been stretched from a rest length of 30 cm to 60 cm. How much work is done in stretching the spring from 40 cm to 50 cm?

4. A force of 20 lbs is required to hold a spring that has been stretched from a rest length of 12 in to 21 in. Find the work done in stretching this spring 1 foot from its resting position.

5.   5J of work are needed to stretch a spring from a rest length of 50 cm to 80 cm.

a. How much work is necessary to stretch this spring from 60 cm to 70 cm?

b. How much beyond its rest length will the spring be stretched with a force of 100N?