

Due at the beginning of class on the day of Test 1

Direction: Solve the problems in this worksheet on separate sheets of paper. Write your solution neatly. Use standard size paper. Clearly label each problem, and include each problem in the correct order. No ragged edges. Staple multiple pages. At the top of the first page put your name, Math 2414, and the title of the worksheet. Show all work to justify your answer. Answer with insufficient work will receive no credit.

Problem 1: Compressing a spring

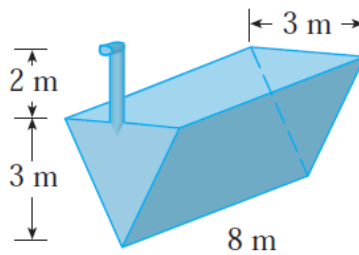
A force of 30N compresses a spring 0.3m from its natural length. Find the work done in compressing the spring an additional 0.3m.

Problem 2: Stretching a spring

A spring has a natural length of 20 cm. If a 25N force is required to keep it stretched to a length of 30 cm, how much work is required to stretch it from 20 cm to 25 cm?

Problem 3: Pumping water

Find the work done in emptying the tank in the figure by pumping the water out of the spout. Density of water is 1000kg/m^3 .



Problem 4: Pumping water

Find the work done in emptying the tank in the figure by pumping the water out of the spout. Density of water is 1000kg/m^3 .

