MATH 211: 9-15 WORKSHEET

(1) Suppose you measured that a force of 60 pounds stretches a certain spring a distance of 2 feet from the equilibrium point. How much work would it take to compress the spring 5 feet starting from the equilibrium point? [Hint: Recall Hooke's law that $F = k \cdot x$, where F is the force, k is a constant that depends on the spring, and x is the distance from the equilibrium point.]

(2) A wire is stretched taut 10 meters between poles. You were told by a trustworthy genie that the density of the wire x meters from the pole is given by $\delta(x) = 600 - 10\sin(\pi x/10)$ grams per meter. Use this to determine the total mass of the wire.