

**Exercise 1.** A spring with a natural length of 1 m requires a force of 10 N to be held at a stretched length of 2 m. How much work is done in compressing the spring from its natural length down to a length of 60 cm?

**Exercise 2.** A cylindrical tank, with a vertical axis, has a radius of 5 ft and a height of 10 ft. If the tank rests on the ground, how much work is done in pumping the tank full of water? The density of water is  $62.4 \text{ lb/ft}^3$ .

**Exercise 3.** A tank full of oil is buried 4 feet underground. The tank has the shape of a cylinder of radius 2 ft and height 10 ft, but rests on its side. How much work is done in pumping all of the oil in the tank to ground level if its density is  $50 \text{ lb/ft}^3$ ?