1. A force of 24 N is required to stretch a spring 6 cm from its natural length of 30 cm.
   a. Find the work done in stretching the spring from its natural length to a length of 38 cm.

   b. Find the work done in stretching the spring an additional 8 cm.

2. An aquarium 3 m long, 1 m wide, and 2 m deep is full of water. Find the work needed to pump half of the water (whose density is 1000 kg/ cubic meter) out of the aquarium.

3. A circular swimming pool has a diameter of 24 ft. The sides are 5 ft high and the depth of the water is 4 ft. How much work is required to pump all of the water (whose density is 62.4 pounds per cubic foot) out over the side.

4. A conical tank has a top diameter of 10 m and an altitude of 15 m. It is filled to the top with water (whose density is 1000 kg per cubic meter). A pump takes suction from the bottom of the tank, and pumps the liquid up to a level 8 m above the top of the tank. Find the total amount of work done.