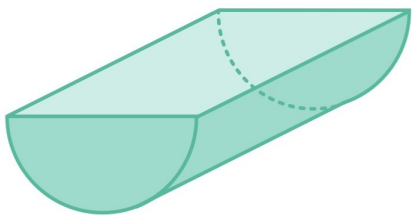
## 6.6 Work Examples

**Example 1:** It takes a force of 10 N to compress a spring 0.2 m from equilibrium. How much work is done to stretch the spring 0.5 m from equilibrium?

**Example 2:** If 10 J of work is needed to stretch a spring 0.5 m beyond its natural length, how much work is needed to stretch it from 1 to 2 m beyond its natural length?

**Example 3:** A cable that weighs 2 lbs/ft is attached to a bucket filled with water that weighs 40 lbs. The bucket is initially at the bottom of a 100 ft well. Determine the amount of work necessary to lift the bucket to the top of the well.

**Example 4:** A cylindrical tank with radius 4 m and height 10 m is filled with water to a level of 8 m. Find the work required to pump the water out of the top of the cylindrical tank.

**Example 5:** A conical tank with base radius 4 m and height 10 m is filled with water to a level of 8 m. Find the work required to pump the water out of the top of the cylindrical tank.

**Example 6:** A tank is formed by taking half of a cylinder of radius 5 m and height 14 m and laying it on its side. It is filled with water to a level of 4 m. Find the work required to pump the water out of the top of the cylindrical tank.