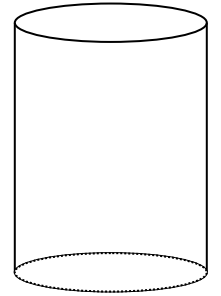MA 182   Calculating Work
Section 6.5

1.   A cylindrical tank with diameter 3 m and height 6 m is full of water with
        density 1000 kg/m³. **Find the work required to pump all of the water**

(a)   over the top rim of the tank

(b)   through a pipe that rises to a height of 4 m above the top of the tank.

**2.   Redo problem #1,   If the tank is only half-full of water, Find the work required to
        pump all of the water**

(a)   over the top rim of the tank

(b)   through a pipe that rises to a height of 4 m above the top of the tank.

Answers
1.   (a) 9800(2.25)(18) π ≈ 1,246,898 J   (b)   9800(2.25)(42) π ≈ 2,909,428 J
2.   (a) 9800(2.25)(13.5) π ≈ 935,176 J   (b)   9800(2.25)(25.5) π ≈ 1,766,439 J