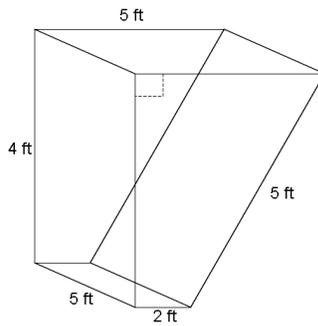




Problem Solving Problems

1. A spherical tank of radius 8 ft is half full of oil that weighs 50 pounds per cubic foot. Find the work to pump oil out through a hole in top of the tank.

2. A gas tank has a trapezoidal cross section as shown below and is 5 feet wide. How much work does the engine do in pumping the gas out of the top of the tank if fuel weighs approximately 55.6 pounds per cubic foot.



3. A cylindrical water tank 4 meters high with a radius of 2 meters is buried so that it is 1 meter below the ground. How much work is done in pumping a full tank of water up to ground level? Water weighs 9800 Newtons per cubic meter.