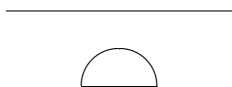


3. (6) A gas station is going to construct an underground tank in the shape of the top half of a sphere of radius 8 ft. The tank will be buried so that the top is 10 feet below ground level (a cross section is shown below). Find the amount of work required to pump a full tank of gas out of the tank. (Gasoline weighs 42 lb/ft^3 .)



4. (6) Just before construction of the new tank begins, a worker notices that perhaps it would be better to build the tank upsidedown of what was planned. That is, to build it as the *bottom* half of a sphere. How much work is required to pump out a full tank of gas in this new configuration?

