

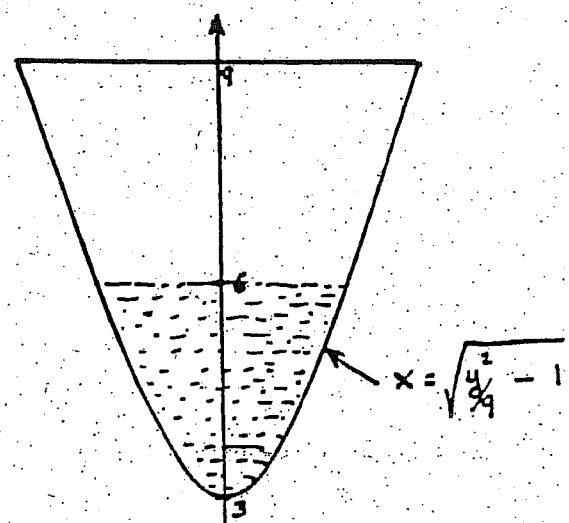
PROBLEMS ON WORK

above the surface of Earth.

(Take the radius of Earth as 4 000 miles and give your answer in ton-miles.)

- b) How much additional work would be required to put the satellite in geosynchronous orbit (orbits the Earth once a day) at an altitude of 22 400 miles above the surface of Earth.

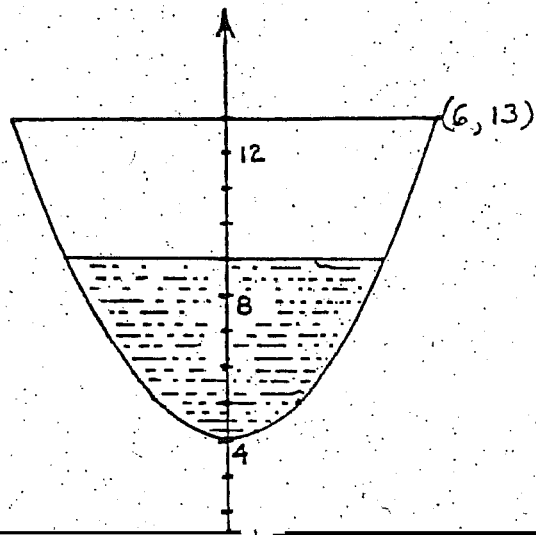
2. A tank is located with its base 3 m. above ground level. The shape of the tank is formed by revolving the hyperbola $\frac{y^2}{9} - x^2 = 1$ about the y axis for $3 \leq y \leq 9$.



- a) Calculate the work done to fill the tank to a depth of 3 m. with oil of density 800 kg/m^3 if the oil is pumped in from ground level.



7. A tank which is 9 ft. high, has its base 4 ft. above ground level and is formed by revolving the parabola $y = \frac{x^2}{4} + 4$ about the y axis. If the tank is filled to a depth of 5 ft. with oil of density 50 lb/ft³, find the work done in pumping all the oil up over the top of the tank.



ANSWERS

