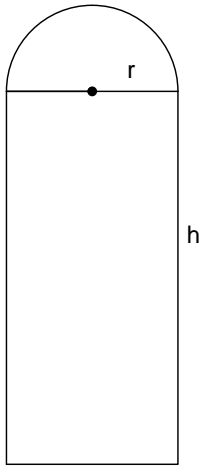


**Question #53951– Math – Geometry**

To the nearest pound, how much grain will the Silo hold if the height of the ladder is 40 feet and the radius is 6 feet? (1 cubic foot = 62.43 pounds)



$h = 40$  feet,  $r = 6$  feet

**Solution:**

The Silo is a composite of cylinder and hemisphere.

$$V_c = \pi r^2 h = \pi \cdot 6^2 \cdot 40 = 4,523.89 \text{ cubic foot} = 282,426.67 \text{ pounds}$$

$$V_h = \frac{1}{2} \cdot \frac{4}{3} \pi r^3 = \pi \cdot \frac{2}{3} \cdot 6^3 = 452.39 \text{ cubic foot} = 28,242.67 \text{ pounds}$$

$$V = V_c + V_h = 282,426.67 + 28,242.67 = 310,669 \text{ pounds}$$

**Answer:**

**310,669 pounds grain.**