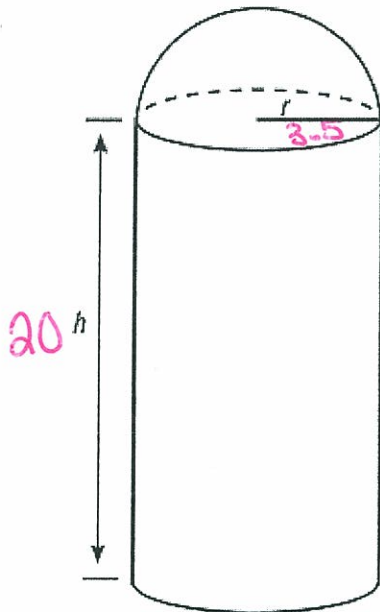


Example 1: A grain silo is in the shape of a cylinder, and it has a dome-shaped roof. It has the following dimensions:

$$r = 3.5 \text{ m} \quad \leftarrow \text{Radius}$$

$$h = 20 \text{ m} \quad \leftarrow \text{Height}$$



a) It is being repainted. What is the surface area that will need to be painted?

(Remember, the bottom will not be painted.)

$$\text{Top: Half a Sphere} \rightarrow A = \frac{4\pi r^2}{2}$$

$$A = \frac{4 \times \pi \times 3.5^2}{2} = 76.969$$

$$\text{Side: Side of Cylinder} \rightarrow A = 2\pi r h$$

$$A = 2 \times \pi \times 3.5 \times 20$$

$$= 439.823$$

$$\text{Total Surface Area} \rightarrow 439.823 + 76.969$$

$$\boxed{SA = 516.792 \text{ m}^2}$$

b) A quart of paint usually covers 25 m². How many quarts are needed?

How many groups of 25 fit into 516.792?
(divide)

$$516.792 \div 25 = 20.67$$

20 quarts won't be enough.

$\boxed{\text{They will need 21 quarts}}$

c) If a quart of paint costs \$35.49 how much will be spent on the paint (before taxes)

21 quarts \times \$35.49 per quart.

$$21 \times 35.49 = 745.29$$

$\boxed{\text{It will cost } \$745.29}$