

## 9.3

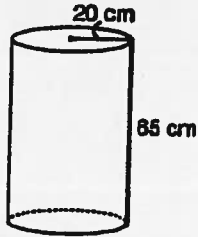
# Surface Area and Volume of Cylinders

Date: \_\_\_\_\_


 Section  
9.3

Where necessary, round your answers to one decimal place. Use  $\pi = 3.14$ .

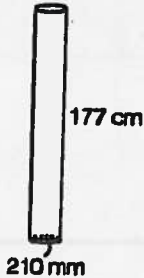
1. Find the surface area of the cylinder.



$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi rh \\
 &= 2\pi(\text{---})^2 + 2\pi(\text{---})(\text{---}) \\
 &\doteq \text{---} + \text{---} \\
 &\doteq \text{---}
 \end{aligned}$$

The surface area of the cylinder is approximately \_\_\_\_\_  $\text{cm}^2$ .

2. Find the surface area of the cylinder.

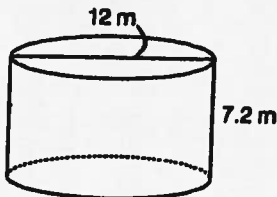


Convert units to centimetres. Since there are 10 mm in 1 cm,  
210 mm is \_\_\_\_\_ cm.

$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi rh \\
 &= \\
 &\doteq
 \end{aligned}$$

The surface area of the cylinder is approximately \_\_\_\_\_  $\text{cm}^2$ .

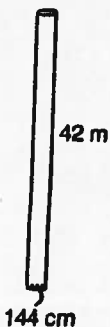
3. Find the volume of the cylinder.



$$\begin{aligned}
 V &= \pi r^2 h \\
 &= \pi(\text{---})^2(\text{---}) \\
 &\doteq \text{---}
 \end{aligned}$$

The volume of the cylinder is approximately \_\_\_\_\_  $\text{m}^3$ .

4. Find the volume of the cylinder.



Convert units to metres. Since there are 100 cm in 1 m,

144 cm is \_\_\_\_\_ m.

$$\begin{aligned}
 V &= \pi r^2 h \\
 &= \\
 &\doteq
 \end{aligned}$$

The volume of the cylinder is approximately \_\_\_\_\_  $\text{m}^3$ .

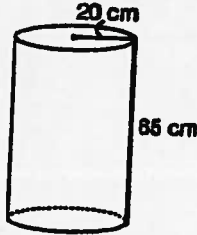
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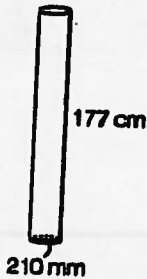
1. Find the surface area of the cylinder.



$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi(20)^2 + 2\pi(20)(65) \\ &= 2512 + 8168 \\ &= 10676 \text{ cm}^2 \end{aligned}$$

The surface area of the cylinder is approximately 10676  $\text{cm}^2$ .

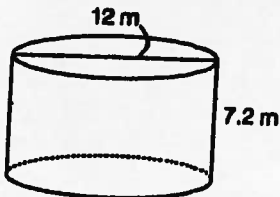
2. Find the surface area of the cylinder.

Convert units to centimetres. Since there are 10 mm in 1 cm, 210 mm is 21 cm.

$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2 \times 3.14 \times 210^2 \text{ mm} + 2 \times 3.14 \times 210 \times 177 \\ &= \text{mm} \end{aligned}$$

The surface area of the cylinder is approximately \_\_\_\_\_  $\text{cm}^2$ .

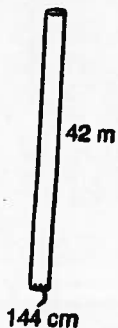
3. Find the volume of the cylinder.



$$\begin{aligned} V &= \pi r^2 h \\ &= \pi(12)^2(7.2) \\ &= 813.9 \end{aligned}$$

The volume of the cylinder is approximately 813.9  $\text{m}^3$ .

4. Find the volume of the cylinder.

Convert units to metres. Since there are 100 cm in 1 m, 144 cm is 1.44 m.

$$\begin{aligned} V &= \pi r^2 h \\ &= 3.14 \times 1.44^2 \times 42 \\ &= \end{aligned}$$

The volume of the cylinder is approximately \_\_\_\_\_  $\text{m}^3$ .