

Surface Area of Cylinders

There are 3 "faces" on a cylinder.

Location of "face"

Area formula

1. Top → circle

$$\pi r^2$$

2. Bottom → circle

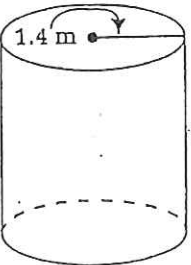
$$\pi r^2$$

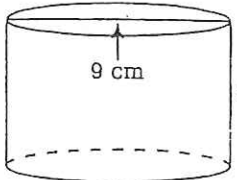
3. Side → rectangle

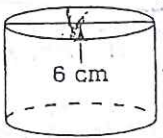
$$2\pi r h$$

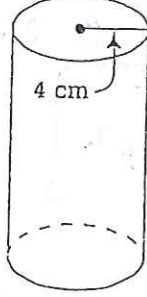
Formula for the Surface Area of a Cylinder = $2\pi r h + 2B$

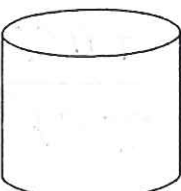
Find the surface area of each cylinder. Describe your strategy or show your work.

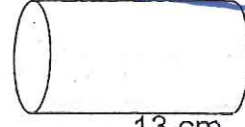
1)  $2 \cdot \pi \cdot 1.4 \text{ m} \cdot 3 \text{ m} + 2 \cdot \pi (1.4 \text{ m})^2$
 $8.4\pi \text{ m}^2 + 3.92\pi \text{ m}^2$
 $12.32\pi \text{ m}^2$
S.A. $\approx 38.7 \text{ m}^2$

2)  $54\pi \text{ cm}^2 + 40.5\pi \text{ cm}^2$
 $94.5\pi \text{ cm}^2$
S.A. $\approx 296.9 \text{ cm}^2$

3)  $24\pi \text{ cm}^2 + 18\pi \text{ cm}^2$
 $42\pi \text{ cm}^2$
S.A. $\approx 131.9 \text{ cm}^2$

4)  $112\pi \text{ cm}^2 + 32\pi \text{ cm}^2$
 $144\pi \text{ cm}^2$
S.A. $\approx 452.4 \text{ cm}^2$

5) Diameter = 22 cm
 $770\pi \text{ cm}^2 + 242\pi \text{ cm}^2$
 $1,012\pi \text{ cm}^2$
S.A. $\approx 3,179.3 \text{ cm}^2$

6) $r = 4 \text{ cm}$
 $104\pi \text{ cm}^2 + 32\pi \text{ cm}^2$
 $136\pi \text{ cm}^2$
S.A. $\approx 427.3 \text{ cm}^2$