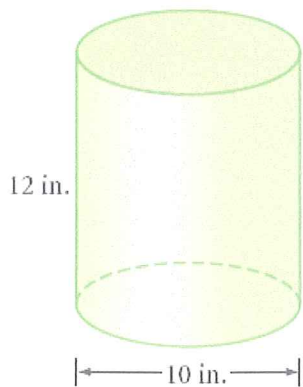


Basic Surface Area and Volume of Cylinders- Notes

<p><u>Surface Area:</u></p> $SA = 2\pi r^2 + 2\pi rh$	<p><u>Lateral Area:</u></p> $LA = 2\pi rh$ <p>NO BASES!</p>	<p><u>Volume:</u></p> $V = BH$ <p>B = AREA of BASE $B = \pi r^2$</p> <p>H = Height connecting two bases.</p>
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Example1:

Find the volume, lateral area and surface area of the prism.



$$r = 5 \text{ in}$$

$$SA = 2\pi r^2 + 2\pi rh$$

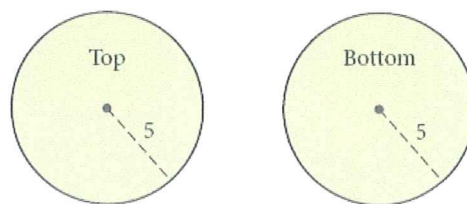
$$SA = 2\pi 5^2 + 2\pi 5 \cdot 12$$

$$SA \approx 534.1 \text{ in}^2$$

$$\text{Volume} = (\pi r^2)H$$

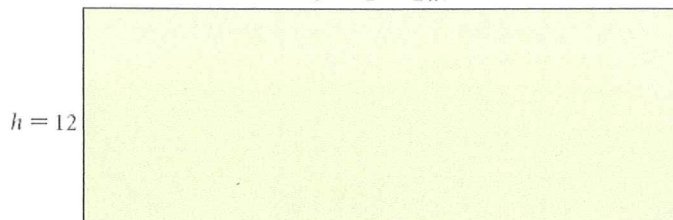
$$V = \pi 5^2 \times 12$$

$$V \approx 942.5 \text{ in}^3$$



Bases

$$b = C = 2\pi r$$



Lateral surface

$$\text{Lateral Area: } 2\pi rh$$

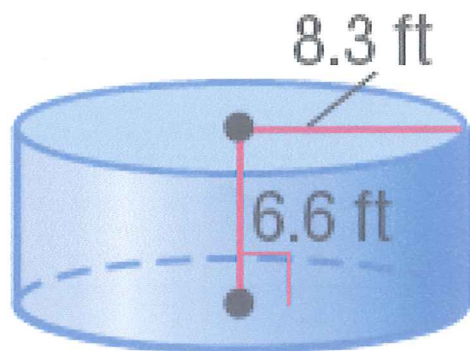
$$LA = 2\pi 5 \cdot 12$$

$$LA \approx 376.99$$

$$\therefore LA \approx 377.0 \text{ in}^2$$

Practice Examples: Find the volume, lateral area and surface area of the solid.

2.

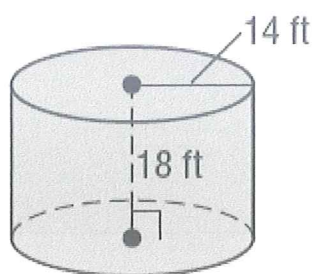


$$SA = 2\pi r^2 + 2\pi rh$$
$$SA = 2\pi(8.3)^2 + 2\pi(8.3)(6.6)$$
$$(SA \approx 777.0 \text{ ft}^2)$$

$$LA = 2\pi rh$$
$$LA = 2\pi(8.3)(6.6)$$
$$LA \approx 344.2 \text{ ft}^2$$

$$\text{Volume: } V = (\pi r^2)h$$
$$V = \pi(8.3)^2 \times 6.6$$
$$V \approx 1428.4 \text{ ft}^3$$

3.



$$V = (\pi r^2)h$$
$$V = \pi 14^2 \times 18$$
$$V = 11083.5 \text{ ft}^3$$

$$LA = 2\pi rh$$
$$LA = 2\pi 14 \times 18$$
$$LA \approx 1583.4 \text{ ft}^2$$

$$SA = 2\pi r^2 + 2\pi rh$$
$$SA = 2\pi(14)^2 + 2\pi 14 \times 18$$
$$SA \approx 2814.9 \text{ ft}^2$$