

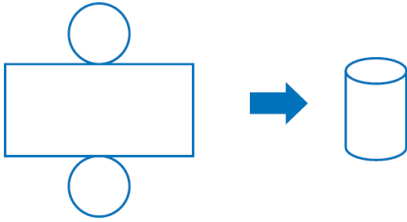
Geometry

Unit Three: LA & SA of Cylinders, Cones, & Spheres (IC17)

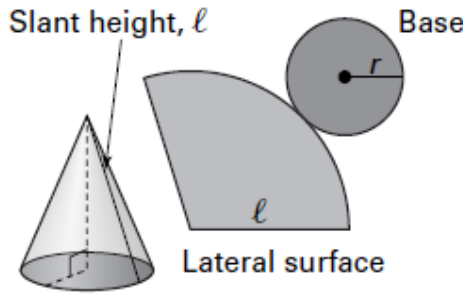
Name: \_\_\_\_\_

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

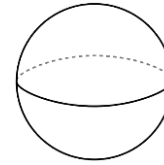
Cylinders:



Cones:



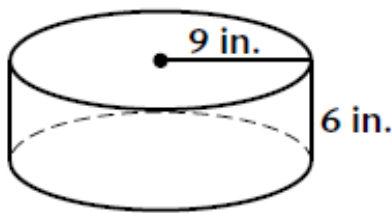
Spheres:



	Lateral Area	Surface Area	Volume
Cylinders	$2\pi rh$ (right) $2\pi r\ell$ (oblique)	$LA + 2\pi r^2$	$= \pi r^2 h$
Cones	$\pi r\ell$	$LA + \pi r^2$	$= \frac{\pi r^2 h}{3}$
Spheres	N/A	$4\pi r^2$	$= \frac{4\pi r^3}{3}$
Hemisphere	$2\pi r^2$	$3\pi r^2$	$= \frac{2\pi r^3}{3}$

Examples: Find the LA and SA of the solids below.

1.



$$LA = 2\pi rh$$

$$LA = 2\pi(9)(6)$$

$$LA = 108\pi \text{ in}^2$$

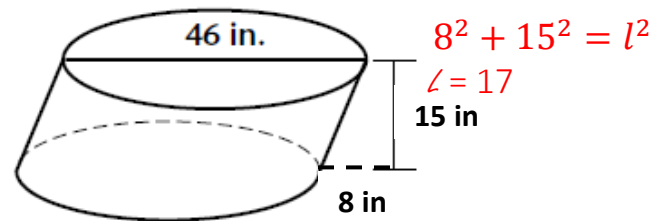
$$SA = LA + 2\pi r^2$$

$$SA = 108\pi + 2\pi(9)^2$$

$$SA = 108\pi + 162\pi$$

$$SA = 270\pi$$

2.



$$LA = 2\pi r\ell$$

$$LA = 2\pi(23)(17)$$

$$LA = 782\pi \text{ in}^2$$

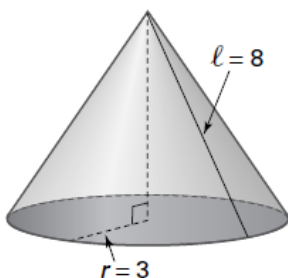
$$SA = LA + 2\pi r^2$$

$$SA = 782\pi + 2\pi(23)^2$$

$$SA = 782\pi + 1058\pi$$

$$SA = 1840\pi \text{ in}^2$$

3.



$$LA = \pi r\ell$$

$$LA = \pi(3)(8)$$

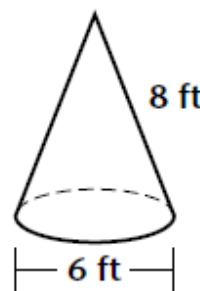
$$LA = 24\pi \text{ u}^2$$

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

$$SA = 24\pi + \pi(3)^2$$

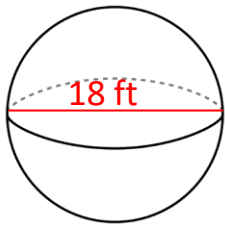
$$SA = 33\pi \text{ u}^2$$

4.



You may skip #4  
Why do you think so?

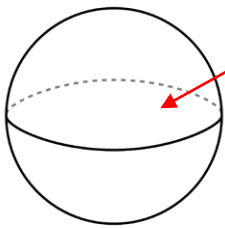
5. Find the SA and Volume of a sphere with a diameter of 18 ft.



$$\begin{aligned}SA &= 4\pi r^2 \\SA &= 4\pi(9)^2 \\SA &= 324\pi \text{ ft}^2\end{aligned}$$

$$\begin{aligned}V &= \frac{4}{3}\pi r^3 \\V &= \frac{4}{3}\pi(9)^3 \\V &= \frac{4}{3}\pi(729) \\V &= 972\pi \text{ ft}^3\end{aligned}$$

6. If the area of a cross section of a sphere is  $50\pi \text{ cm}^2$ , find the SA of the sphere.



Cross section = circle

$$\begin{aligned}\pi r^2 &= 50\pi \\r^2 &= 50 \\r &= 5\sqrt{2}\end{aligned}$$

$$\begin{aligned}SA &= 4\pi r^2 \\SA &= 4\pi(5\sqrt{2})^2 \\SA &= 4\pi(50) \\SA &= 200\pi \text{ cm}^2\end{aligned}$$