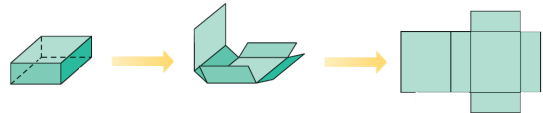


Surface Area

Surface area—the sum of the areas of the faces of the polyhedron

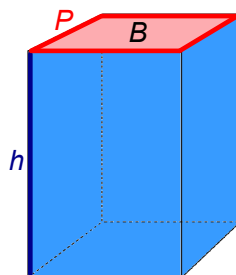
Lateral area—the sum of the areas of the lateral faces of the polyhedron



Surface Area of a Right Prism

$$SA = 2B + Ph$$

B—area of the base
P—perimeter of the base
h—height



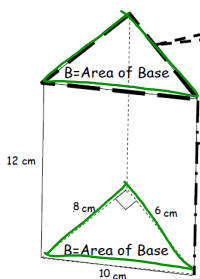
Lateral Area

$$LA = Ph$$

Find the surface area of the right prism.

$SA = 2(10)(8) + 36(16)$
 $SA = 736 \text{ cm}^2$

Find the surface area of the right prism. 



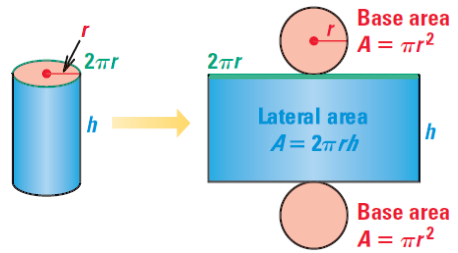
$$2\left(\frac{1}{2}\right)(6)(8) + 24(12)$$

$$SA = 336 \text{ cm}^2$$

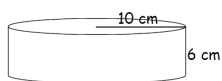
Surface Area of a Right Cylinder

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

r-radius and h-height



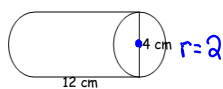
Find the surface area of the right cylinder.



$$SA = 2\pi(10)^2 + 2\pi(10)(6)$$

$$= 320\pi$$

$$\approx 1005.31 \text{ cm}^2$$



$$SA = 2\pi(2)^2 + 2\pi(2)(12)$$

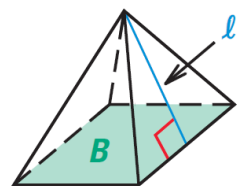
$$= 56\pi$$

$$\approx 175.93 \text{ cm}^2$$

Surface Area of a Regular Pyramid

$$SA = B + \frac{1}{2}Pl$$

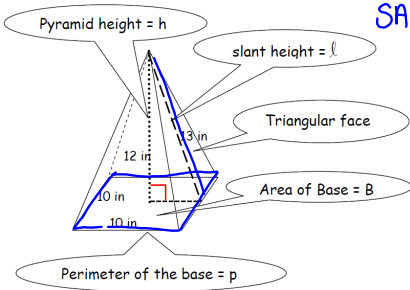
B—area of the base
P—perimeter of the base
l—slant height



Lateral Area

$$LA = \frac{1}{2}Pl$$

Find the surface area of the regular pyramid.

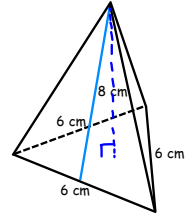


$$SA = 10(10) + \frac{1}{2}(40)(13) = 360 \text{ in}^2$$

Find the surface area of the right pyramid.

$$SA = \frac{1}{4}(6)^2\sqrt{3} + \frac{1}{2}(18)(8)$$

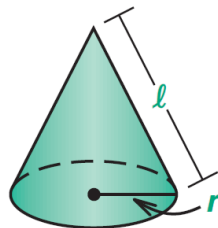
$$SA \approx 87.59 \text{ cm}^2$$



Surface Area of a Right Cone

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

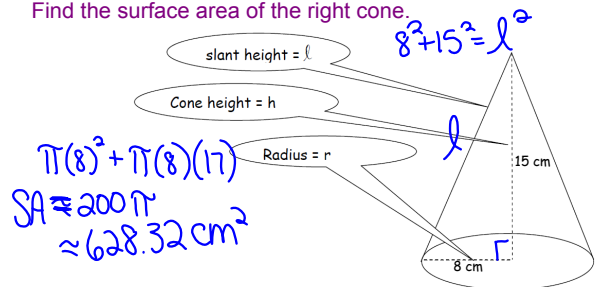
r—radius and ℓ —slant height



Lateral Area

$$LA = \pi r \ell$$

Find the surface area of the right cone.



Surface Area of a Sphere

$$SA = 4\pi r^2$$

$$= 4\pi(15)^2$$

$$= 900\pi$$

$$\approx 2827.43 \text{ m}^2$$

**Conclusion**

1. What is surface area?
2. How do you find it on a prism? Explain.
3. How do you find it on a cylinder? Explain.
4. How do you find it on a sphere?
5. What about a pyramid?
6. Cone?
7. What is the difference in height and slant height?

Assignment**Surface Area Wkst 1**