welcome

## Volume and Surface Area 2 Surface Area

## Prisms

A polyhedron with two $\cong \& \|$ bases that are surrounded by lateral faces that entirely enclose a space


Right rectangular prism


Oblique triangular prism

Prisms are classifies by the shape of their base.

## Surface Area Right Prism

The surface area $S$ of a right prism can be found using the formula $S=2 B+P \cdot h$


Find the surface area of the right prism.
a.

b.


## Cylinder

## Cylinder is a solid with $\cong$ circular bases that are in || planes



A right cylinder has a lateral side $\perp$ to the base

## Surface Area of a Cylinder

## The surface area $S$ of a right cylinder is

$$
S=2 B+C h=2 \pi r^{2}+2 \pi r h
$$



Find the surface area of the right cylinder.


## Chapter 12 Section 3 Pyramid \& Cone

## Pyramid

A polyhedron in which the base is a polygon and the lateral faces are triangles with a common vertex.


A Regular Pyramid has a regular polygon for a base and its height meets the base at its center

## Surface Area Regular Pyramid

The surface area $S$ of a regular pyramid can be found using the formula $S=B+\frac{1}{2} P \cdot \ell$


To find the surface area of the regular pyramid shown, start by finding the area of the base.


## Cone

A Circular Cone has a circular base and a vertex that is not in the same plane as the base.


Lateral Surface connects the vertex with points on the base.

## Surface Area of a Cone

The surface area $S$ of a right circular cone is

$$
\mathrm{S}=\pi \mathrm{r}^{2}+\pi r \ell
$$



To find the surface area of the right cone shown, use the formula for the surface area.


## Spheres

A solid that consists of all the points that make up the space a certain distance from a center


If a plane intersects a sphere, the intersection is either a single point or a circle.

## Surface Area of a Sphere

The surface area $S$ of a sphere with radius $r$ is ...

$$
S=4 \pi r^{2}
$$



BASEBALL A baseball and its leather covering are shown. The baseball has a radius of about 1.45 inches.
a. Estimate the amount of leather used to cover the baseball.
b. The surface of a baseball is sewn from two congruent shapes, each
 of which resembles two joined circles. How does this relate to the formula
 for the surface area of a sphere?

