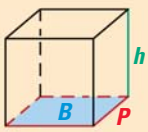
# 8 TAKS PREPARATION

TAKS Obj. 8
TEKS G.8.D

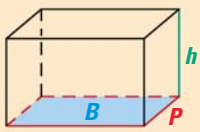
## REVIEWING SURFACE AREA AND VOLUME

To solve math problems involving surface area and volume of solids, you can use the following formulas.

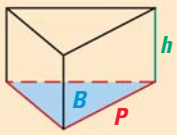
**Prisms**




Cube




Rectangular Prism

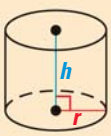



Triangular Prism

Surface Area $= 2B + Ph$

Volume $= Bh$

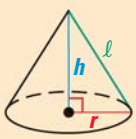
**Cylinder**




Surface Area $= 2\pi r^2 + 2\pi rh$

Volume $= \pi r^2 h$

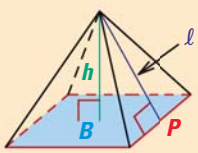
**Cone**




Surface Area $= \pi r^2 + \pi r\ell$

Volume $= \frac{1}{3}\pi r^2 h$

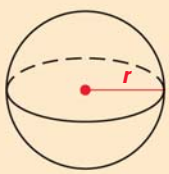
**Pyramid**




Surface Area $= B + \frac{1}{2}P\ell$

Volume $= \frac{1}{3}Bh$

**Sphere**




Surface Area $= 4\pi r^2$

Volume $= \frac{4}{3}\pi r^3$

### EXAMPLE

Find the volume of a desktop computer with the dimensions shown.


**Solution**

**STEP 1** **Find** the area of the base.

$B = 18 \cdot 60$

$= 1080$

**STEP 2** **Calculate** the volume of the computer.

$\text{Volume} = Bh$ — Formula for the volume of a prism

$= (1080)(45)$ — Substitute 1080 for $B$ and 45 for $h$.

$= 48{,}600$ — Simplify.

▸ The volume of the computer is 48,600 cubic centimeters.