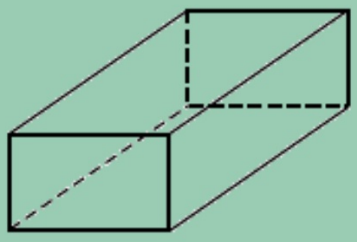
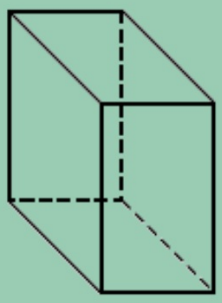
# Understanding Volume and Surface Area of 3-D Figures

# Right Rectangular Prism

## Shape





## Characteristics

faces ____ # of sides on base + 2

edges ____ # of sides on base x 3

vertices ____ # of sides on base x 2

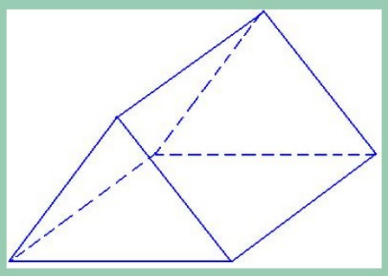
Polygon base

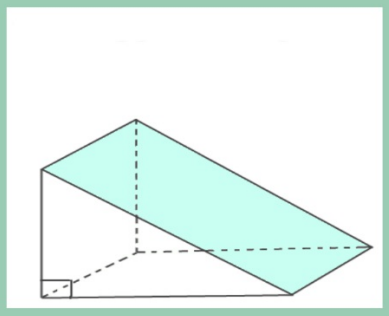
Named by base

2 parallel, congruent bases

# Triangular Prism

## Shape





## Characteristics

faces ____ # of sides on base + 2

edges ____ # of sides on base x 3

vertices ____ # of sides on base x 2

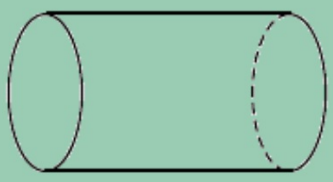
Polygon base

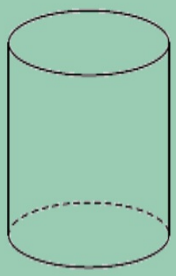
Named by base

2 parallel, congruent bases

# Cylinder

## Shape





## Characteristics

faces ____

edges ____

vertices ____

Circle base

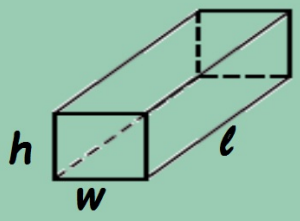
# Lets watch a short video about volume!

# Right Rectangular Prism

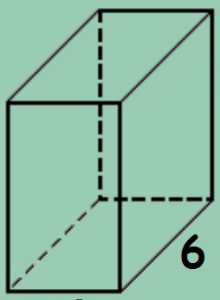
VOLUME

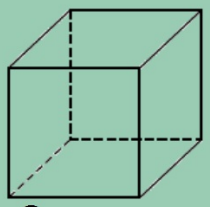
Volume of a rectangular prism equals the product of its length ($\ell$), its width (w), and its height (h).

Volume is expressed in _____ units.




$$V = lwh$$



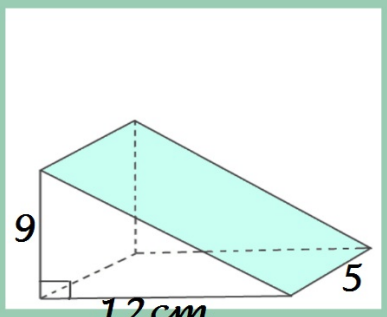



# Triangular Prisms

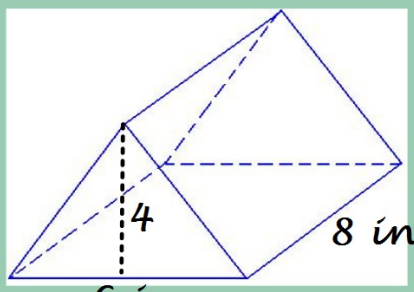
VOLUME

Volume of a rectangular prism equals the area of the base (B) times the height (H).

$$V = BH$$



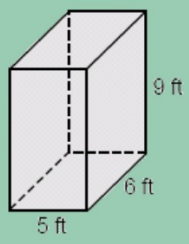

B H V=



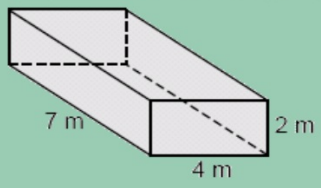

B H V=

# Volume of Rectangular Prism Practice

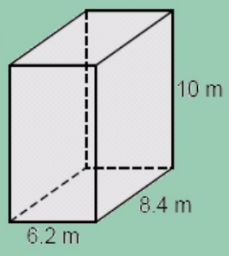
1)



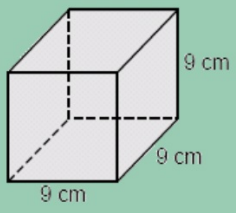

2)




3)




4)




5) Janine keeps her jewelry in a jewelry box that measures 9 centimeters by 4.5 centimeters by 3 centimeters. What is the volume of her jewelry box?

Lets watch a short video on volume and surface area!

# Right Rectangular Prism

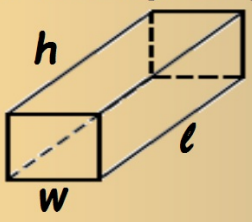
SURFACE AREA

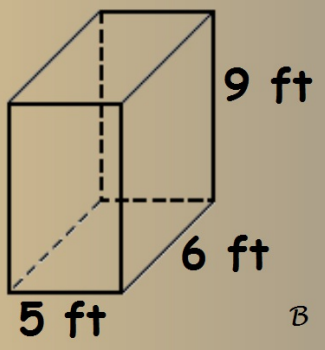
Surface Area of a rectangular prism equals the sum of the areas of its faces.

Surface Area is expressed in _____ units.

## Formula: $SA = 2B + Ph$

(aka: $2lw + 2lh + 2wh$) for rectangular prisms




B P h SA=

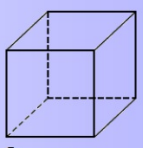
SURFACE AREA

# Cubes

**Surface Area is expressed in _____ units.**

$SA = 2B + Ph$

*(aka: $6s^2$ for cubes)*



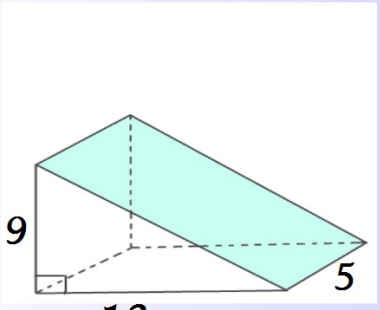
**3 cm**

$B$ $P$ $h$ $SA=$

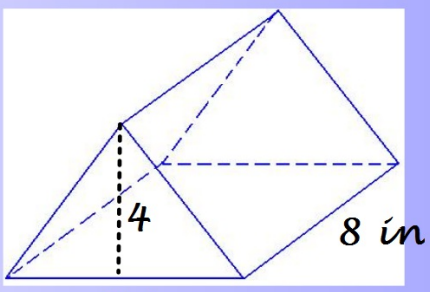
SURFACE AREA

# Triangular Prisms

$SA = 2B + Ph$



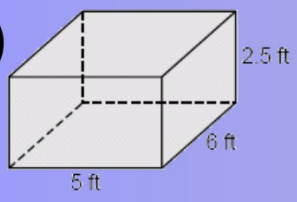

B P h SA=



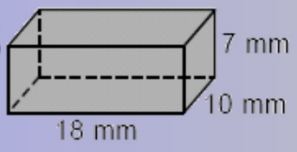

B P h SA=

# Surface Area of Rectangular Prism Practice

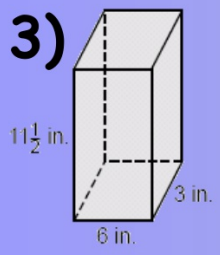
**1)**



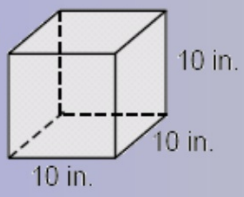

**2)**




**3)**




**4)**




**5)** length, $3\frac{1}{2}$ ft
width, $1\frac{1}{3}$ ft
height, $2\frac{1}{2}$ ft