

VOLUME

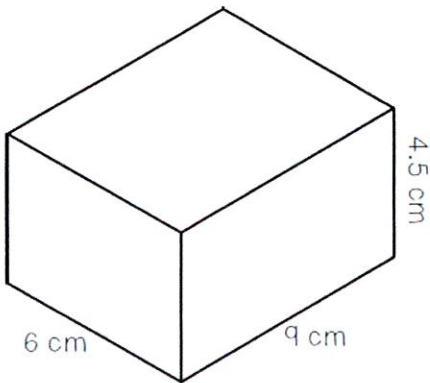
Volume is the total capacity of a three-dimensional object.

It describes how much space the object occupies.

RECTANGULAR PRISMS

- Volume can be determined by finding the area of the base (B) and multiplying it by the height of the object.

• $V = l \cdot w \cdot h$ or $V = b \cdot h \cdot l$

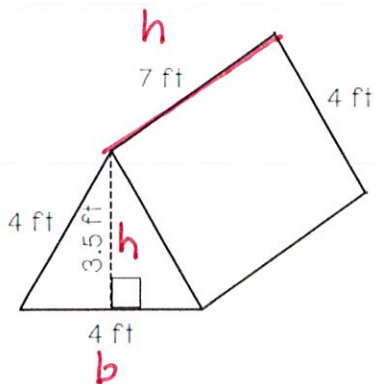


RECTANGULAR PRISM	
FORMULA	$V = lwh$
PLUG IN VALUES	$6(9)(4.5)$
VOLUME	243 cm^3

TRIANGULAR PRISMS

- A triangular prism uses the same formula as a rectangular prism, $V = l \cdot w \cdot h$ or $V = \frac{b \cdot h \cdot l}{2}$.
- However, the base is actually a triangle, so B is actually equal to the $\frac{bh}{2}$ of a triangle.
- The height of the prism is the distance between the bases.

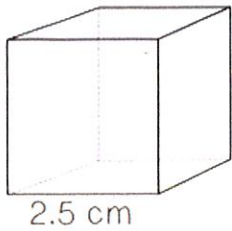
always the triangles



TRIANGULAR PRISM	
FORMULA	$V = \frac{bh}{2} (h)$
PLUG IN VALUES	$\frac{4(3.5)}{2} (7)$
VOLUME	49 ft^3

WE DO:

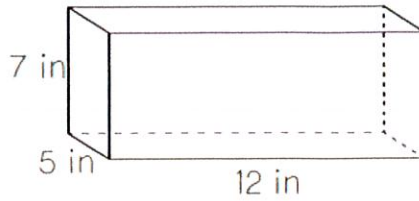
1.



$$2.5(2.5)(2.5)$$

$$\text{Volume} = \underline{15.625 \text{ cm}^3}$$

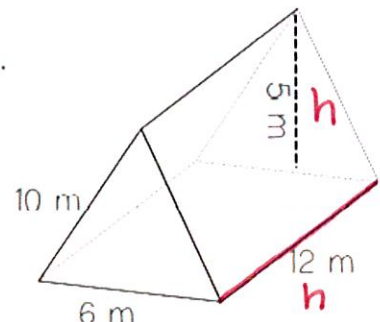
2.



$$7(5)(12)$$

$$\text{Volume} = \underline{420 \text{ in}^3}$$

3.



$$\text{Volume} = \frac{6(5)}{2}(12)$$

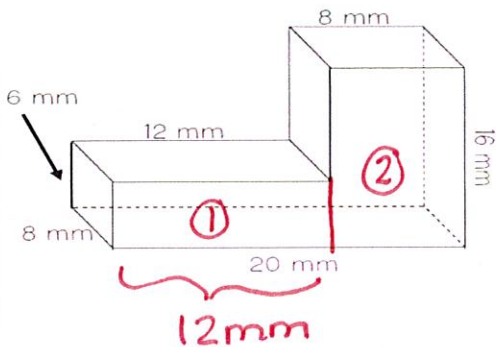
$$\underline{180 \text{ cm}^3}$$

VOLUME OF COMPOSITE SHAPES:

COMPOSITE FIGURES

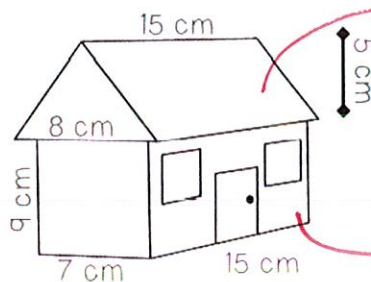
- Even a three dimensional object can be considered composite.
- The volume of a composite object can be found by adding or subtracting the volume of each shape.

1. Decompose each object into different figures. Then, find the volume of each figure.



	SHAPE 1	SHAPE 2
FORMULA	$V = lwh$	$V = lwh$
PLUG IN VALUES	$6(8)(12)$	$8(16)(8)$
VOLUME	576 mm^3	1024 mm^3
COMPOSITE VOLUME	1600 mm^3	

$$576 + 1024 \rightarrow$$



$$\frac{5(8)}{2}(15) = 300 \text{ cm}^3$$

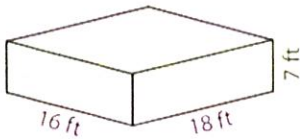
$$7(15)(9) = 945 \text{ cm}^3$$

$$300 + 945 =$$

$$\text{Volume: } \underline{1,245 \text{ cm}^3}$$

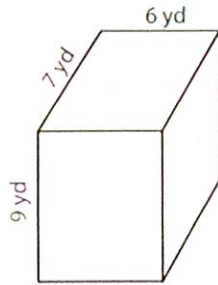
YOU DO:

$$16(18)(7)$$



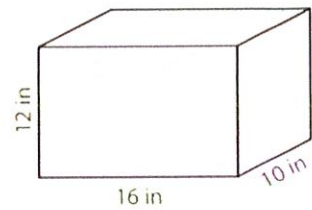
$$\text{Volume} = \frac{2016}{8910} \text{ ft}^3$$

$$9(7)(6)$$



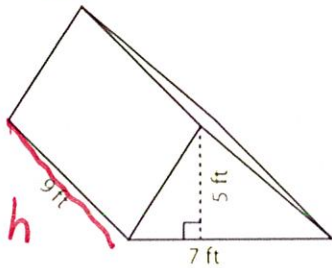
$$\text{Volume} = 378 \text{ yd}^3$$

$$16(12)(10)$$



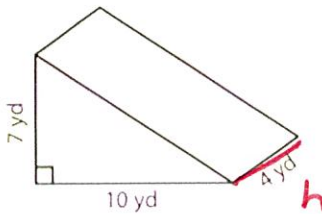
$$\text{Volume} = 1920 \text{ in}^3$$

$$\frac{7(5)}{2}(9)$$



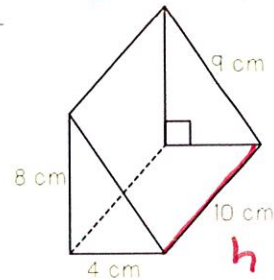
$$\text{Volume} = 157.5 \text{ ft}^3$$

$$\frac{7(10)}{2}(4)$$



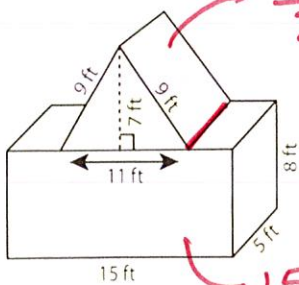
$$\text{Volume} = 140 \text{ yd}^3$$

$$\frac{8(4)}{2}(10)$$



$$\text{Volume} = 160 \text{ cm}^3$$

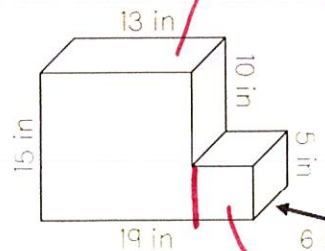
$$\frac{7(11)}{2}(5) = 192.5$$



$$15(5)(8) = 600$$

$$\text{Volume} = 792.5 \text{ ft}^3$$

$$15(13)(6) = 1170$$



$$5(6)(6) = 180$$

$$\text{Volume} = 1350 \text{ in}^3$$