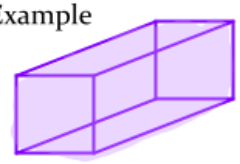
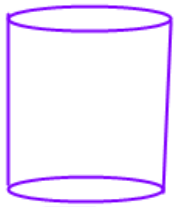
Lesson 6-2

volume	Decode
Definition everything inside an object	Example 

Example 1: Finding Volume

Find the volume of each prism.

I Do	We Do
Find the volume of a rectangular prism that is 12 meters by 3 meters by 11 meters $= 12 \cdot 3 \cdot 11$ $V = l \cdot w \cdot h$ $= 396 m^3$	Find the volume of a cylinder with a radius of 4 cm and a height of 13 cm $A = \pi r^2$ $= \pi 4^2 = 50.24$ $\times 13$ $653.12 cm^3$  13cm $653 cm^3$

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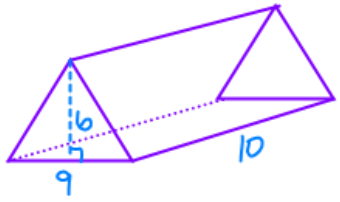
Find the volume of each prism.

I Do	We Do
Find the volume of a triangular prism when the height of the triangle is 6 in., the base of the triangle is 9 in., and the height of the prism is 10 in.  $A = \frac{1}{2}bh$ $= \frac{1}{2} \cdot 9 \cdot 6$ $= 27$ $270 in^3$	Find the volume of a cylinder with a radius of 7 cm and a height of 21 cm

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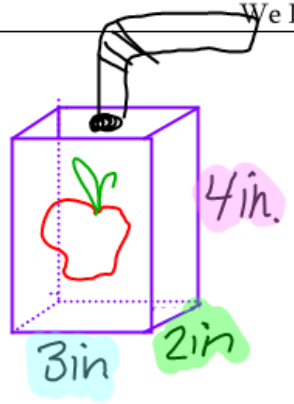
Example 2: Exploring Effects l w h

Misti has a juice box that is 3 in. by 2 in. by 4 in. Explain whether tripling the length, width, or height of the box would triple the amount of juice the box holds.

We Do



OG	x3 length	x3 width	x3 height
3·2·4	9·2·4 18·4	3·6·4 18·4	3·2·12 6·12
$24in^3$	$72in^3$	$72in^3$	$72in^3$

Tripling any side tripled the volume.

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Example 3: Finding Combined Volume

You have a toy house that has a 12 feet by 13 feet by 11 feet rectangular shape. There is a triangular prism on top that acts as the roof. The triangle has a height of 5 feet, a base of 14 feet, and an overall length of 13 feet. Find the volume.

We Do

base volume

$12 \cdot 13 \cdot 11$

$= 1,716\ ft^3$

roof volume

$V =$ base area $\cdot$ height

$= \frac{1}{2} \cdot 14 \cdot 5$

$= 35ft^2 \cdot 13$

$= 455\ ft^3$

$1,716$

$+\ 455$

$2,171\ ft^3$