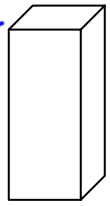
Math 8 Date:_____

7.1 Notes: Understanding Volume

Review

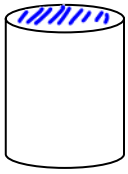
Name each of the following shapes:

rectangular prism



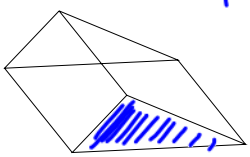
base is a rectangle. (any side could be the base)

cylinder



base is a circle.

triangular prism

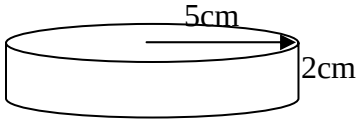


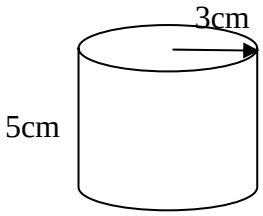
base is a triangle

Draw an arrow to the side of the shape that could be the base.

base is very important for finding volume

Sherman wants to package his Gourmet Spinach Paste in a cylindrical container. Which container do you think might hold more Sauce?

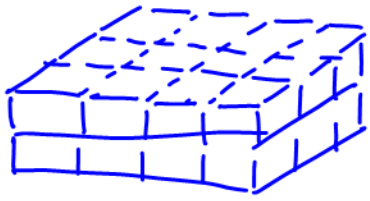




Volume is the amount of space a 3d object takes up or can hold measured in cm^3

Using cm cubes:

If you make rectangular prism with a base that measures 3 x 4 cm, what is the volume if the height is 2cm?



bottom layer = 12 blocks.

2 layers, need 24 blocks

$V = 24\ cm^3$

If you make a rectangular prism with a base that measures 2 x 3 cm, what is the volume if the height is 4cm?

bottom layer = 6 blocks

4 layers, need 24 blocks.

this is the same shape as just tipped over.

height = #layers height = #layers.

What is the difference between a 2 x 3 x 4 rectangular prism and a 3 x 4 x 2 rectangular prism?

base base

one is tipped over, so it looks different
" different orientation or view "

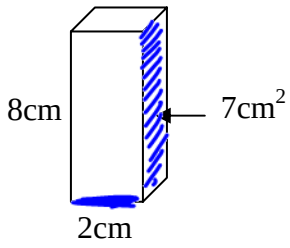
Summary

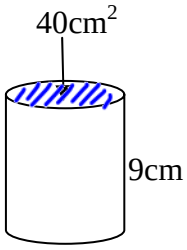
the orientation of an object does not change the volume.

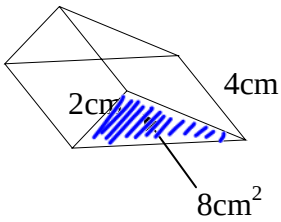
- orientation is how the object is arranged or viewed.

What s the volume of the following shapes:

Volume = area of base x height
cm^2 cm







$V = 7cm^2 \times 2cm$
$= 14\ cm^3$

$V = 40cm^2 \times 9cm$
$V = 360\ cm^3$

$V = 8cm^2 \times 4cm$
$= 32\ cm^3$

Velma has a rectangular fish tank that has a base of 600 cm^2 and contains a depth of 16 cm. She adds a *decorative castle* and finds that the water rises 0.6 cm. What is the new volume of ~~water~~ in the tank? What is the volume of the castle?

old V

$V = 600cm^2 \times 16cm$
$V = 9600\ cm^3$

new V

$V = 600cm^2 \times 16.6cm$
$V = 9960\ cm^3$

castle

$V = 9960 - 9600$
$= 360\ cm^3$

p250 #3,5,7,9-15 * 16,18

Heslip