

Problem of the Day: Solve the equation.
 $-8 + 8x = -22 + 6x$
 $-8 + 8x - 6x = -22 + 6x - 6x$
 $-8 + 2x = -22$
 $2x = -14$
 $x = -7$

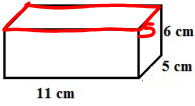
Plan for the Day:
 Collect Homework Week 5 & extra credit puzzle
 Integer quiz (if needed)
 Finish yesterday's notes
 Notes on volume
 Objective: We will be able to find the volume of prisms.
 Good luck Football and Volleyball at Mexia!!

We can find the area of the base of three-dimensional figures by identifying the shape of the base.

The shape of the base names the three-dimensional figure.

Example: A triangular prism has bases that are triangles.

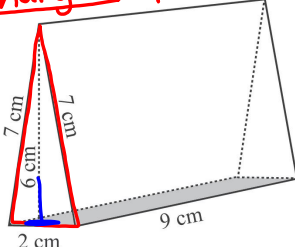
Example 5: Find the area of the base.



$A = bh$
 $A = 11 \cdot 5$
 $A = 55 \text{ cm}^2$

Example 6: Find the area of the base.

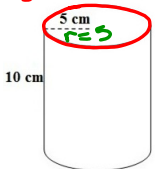
triangular prism



$A = \frac{1}{2}bh$
 $A = \frac{1}{2} \cdot 6 \cdot 2$
 $A = \frac{1}{2} \cdot 12$
 $A = 6 \text{ cm}^2$


Example 7: Find the area of the base.

Cylinder



$A = \pi r^2$
 $A = \pi \cdot 5^2$
 $A = \pi \cdot 25$
 $A = 78.5 \text{ cm}^2$

Volume is the amount of cubic units that are needed to fill a space.



Volume looks at the amount ~~inside~~ of a three-dimensional figure, also called the capacity.

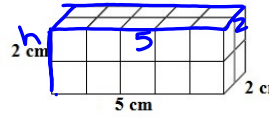
The units for volume are cubic (such as in^3 or cm^3) because we are comparing three dimensions or measurements.

Volume of a prism is given by the formula $V = Bh$ where B is the area of the base and h is the height.

B depends upon what shape the base is, so the formula will have to adjust based upon the shape of the base.

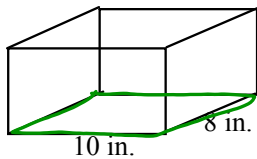
This happens because each layer of the prism is the exact same size, or area, so you multiply the area of the base by the height to get total volume.

Example 1: Find the volume of the object.



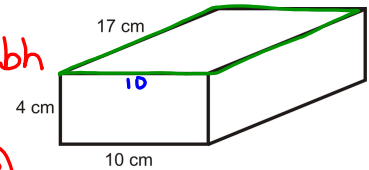
distance between bases
 $V = Bh$
 $B = bh$
 $V = bh \cdot h$
 $V = 5 \cdot 2 \cdot 2$
 $V = 20 \text{ cm}^3$

Example 2: Find the volume of the given object.



$V = Bh$ $B = bh$
 $V = bh \cdot h$
 $V = 10 \cdot 8 \cdot 4$
 $V = 320 \text{ in.}^3$

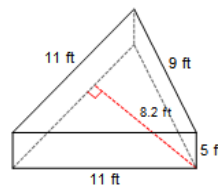
Example 3: A packing box has the dimensions as seen below. How many cubic centimeters can be used to fill the box?



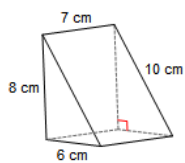
$V = Bh$ $B = bh$
 $V = bh \cdot h$
 $V = 17 \cdot 10 \cdot 4$
 $V = 680 \text{ cm}^3$

For triangular prisms, the base is a triangle so we have to use the formula $A = 1/2bh$ for B .

Example 4: Find the volume of the figure.



Example 5: Find the volume of the figure.



Example 6: The Ross family has a tent that looks like a triangular prism. Find the amount of space in the tent pictured below.

