Topic: Composite Volume and Geometric Modeling **Date**: _____

Learning Objective(s)_____:

_____

_____

Main Ideas/ Questions

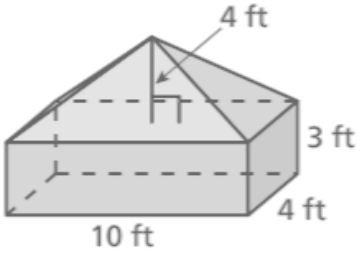
Composite Volume

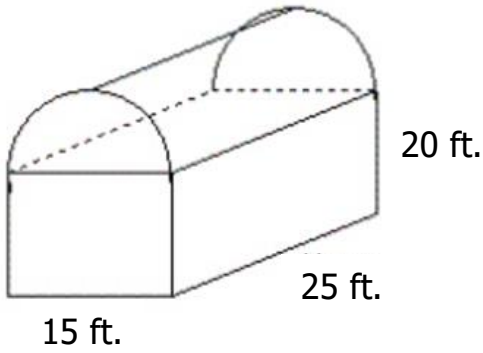
Examples

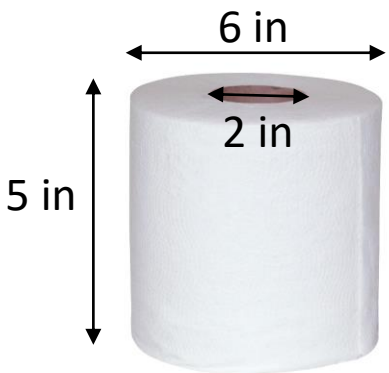
Notes

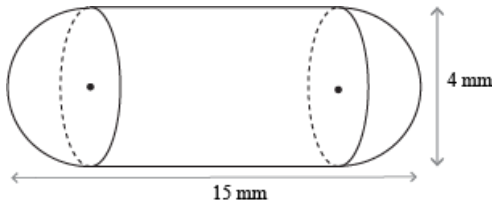
- **Composite Volume** – The volume of MULTIPLE objects either _____ OR _____!

Calculate the volume for each shape.

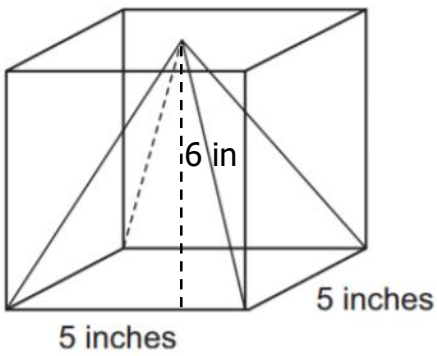








A glass pyramid is packaged inside a box with protective foam. About how many cubic inches of foam is needed to fill the space around the pyramid to protect it from breaking?



Topic: Composite Volume and Geometric Modeling **Date**: _____

Main Ideas/ Questions

Geometric Modeling

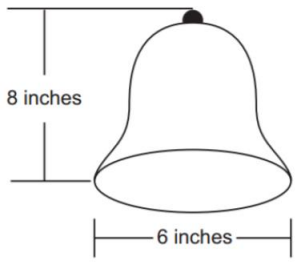
Examples

Notes

- **Geometric Modeling** – Using geometric shapes to model and predict an area or volume

1. A cylindrical oil can is used for cleaning machine parts. It is half full of oil and has a diameter of 9.5 cm and a height of 12.8 cm. What is the volume of the oil in the can?

2. A company needs to package the bell below in a rectangular box. What are the smallest dimensions (length, width, and height) the rectangular box can have so that the lid of the box can close all the way?



3. The radius of a tennis ball is 3 in. If there are three balls kept inside a cylindrical container. How much space in the can is not occupied by the tennis balls?

Population Density

Population Density Examples

- **Population Density** – $\frac{Population}{Area}$

1. If there are 20 people in a room that is 15 ft by 18 ft. What is the population density?

2. At a forest, there is currently 7.5 coyotes per square kilometer. The park spreads over an area of 25 square kilometers. How many total coyotes are there based on this data?

3. A major city has an average of 3450 people visit its park at 4PM that has an area of 5.25 miles^2. An outdoor concert is planned and the park is expected to get an additional 1500 people. How did more times larger will the population density be during the concert?