

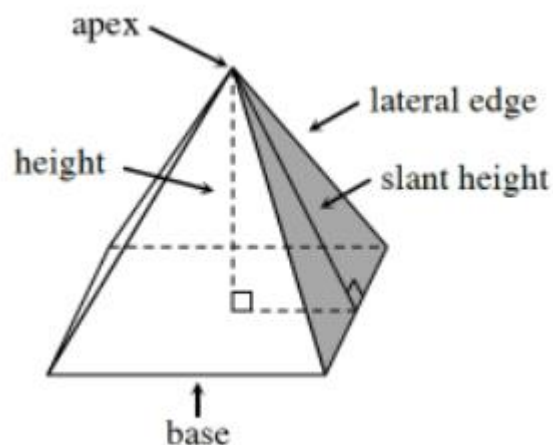
Lesson 11.2.1 Task

Volume and Surface Area of Pyramids and Cones

Polyhedron: A three-dimensional solid made up of flat, polygonal faces

Pyramid: A **pyramid** is a polyhedron formed by connecting each point of a polygonal base to a single given point (the **apex**) that is above or below the flat surface containing the base.

If a face of a pyramid is not a base, it is called a **lateral face**. The shaded face in the diagram below is a lateral face.



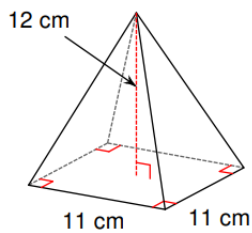
Volume of a Prism:

$$\text{Volume} = (\text{Area of Base}) \cdot (\text{Height of prism})$$

Volume of a Pyramid:

Volume of a Cone:

Example: Find the volume of the pyramid below



Surface area of a Prism:

Sum of the areas of all faces of the prism

Lateral Surface area of a Pyramid (or cone):

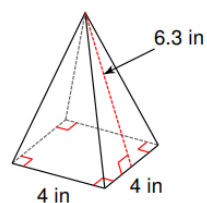
Sum of the areas of all faces of the pyramid or cone (not including the base)

(Total) Surface area of a Pyramid or Cone:

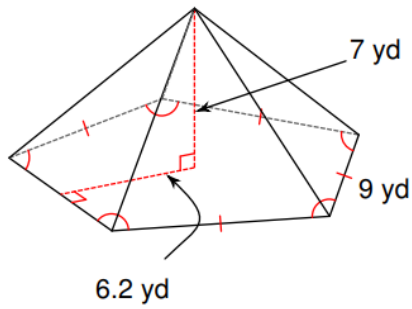
Sum of the areas of all faces of the pyramid or cone, including the base

Surface area of a Cone:

Example: Find the surface area of the pyramid below

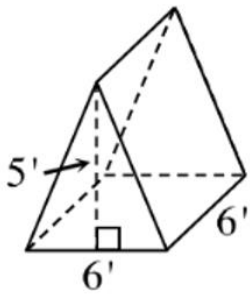


Example: Find the volume and surface area of the pyramid below

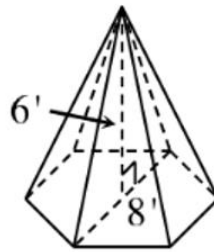


Going Camping

As Soraya shops for a tent, she comes across two models that she likes best, shown at right. However, she does not know which one to pick! They are both made by the same company and appear to have the same quality. She has come to you for help in making her decision.



Tent A



Tent B

To help her make the decision, find the volume, the base areas, and surface area of each tent.

Which tent should she choose? Please explain why you made that decision.