Project 2

This project is due at the beginning of class on Friday, Week 4. It may be turned in in person or uploaded into Moodle. It should be written in full sentences and typed, although please note that equations and math symbols may be written in by hand. While it is acceptable, and encouraged, to work together in thinking about this project, each student is expected to write up results independently. More information on guidelines for this and all our projects are found in the Guidelines Rubric.

Volumes!

I recently bought a tent, and I'd like you to compute the volume of it for me. You can see a picture of it below. This is not a surface of revolution, though. Instead, at every height above the ground, the shape is that of a hexagon. SO, I'd like you to make me a DEAL that is, construct an integral, which will correctly compute the volume (and, I'd like you to actually compute the volume too). My particular tent measures 8 2/3 feet from one corner of the hexagon to the corner opposite it. Please be sure to use only triangles and the Pythagorean theorem in deciding what function to integrate. And please be sure to explain why your integral is what it is.

Finally, the company would like to include a flyer with all the new tents they sell shaped like this which will allow the user to know how much volume the tent has in terms of the length d in feet from one corner of the hexagon to the corner opposite it. Please detail this for them.

Top View