Math 1450, Honor Calculus Practice 6, Fall 2015.
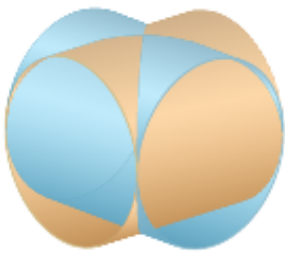
October 26, 2015

PSID: _____   Name: _____

1. Find the volume common to two circular cylinders, each with radius r, if the axes of the cylinders intersect at right angles.

2. A paper drinking cup filled with water has the shape of a cone with height h and semiverical angle θ (see the figure). A ball is placed carefully in the cup, thereby displacing some of water and making it overflow. What is the radius of the ball that cause the greatest volume of water to spill out of the cup?