

## Volume Common to Two Spheres

Find the volume common to two spheres, each with radius  $r$ , if the distance between their centers is  $r/2$ .

The problem stated above comes directly from our Math 125 homework on section 6.2. It is a problem that has tormented some students for years as it requires some amount of visualization and set-up. I encourage you to attempt to visualize it now and see if you can compute the volume.

Many objects in our gallery are examples of dissections of spheres into two shapes of equal volume. So one natural follow up question that we asked and answered was this...

*How close do the centers of the two spheres or radius have to be in order for the common volume between them to be exactly half the volume of one sphere?*

This isn't bad to solve, go ahead and give it a shot. We hope to eventually print the resulting shape as it is an interesting shape with half the volume of a sphere.

We then encourage you to think of other follow-up questions. Can you generalize your findings in some way? What if the radius of the spheres isn't the same? You are only bound by your own imagination. If you have a cool idea, send it our way and we may add it to our gallery or print it yourself.