

Math 225 Take-home 1 on Area and Volume _____

Work must be neat, complete, and done independently (no study group on this one).

1. Sketch the region bounded by $x = 3y - y^2$ and $x + y = 3$. Mark clearly the points of intersection of these two curves. Show the work on you found these points.

Find the area of this region.

2. Rotate the region in question 1 around the y -axis. Visualize the disks that stack up to give the volume of this region. (I will read your mind to mark this part of the problem.) *Set up but don't solve* the integral to find the volume of revolution of this region.

Now rotate this region about the x -axis. Visualize the disks again. *Set up and solve* the integral to find the volume.