MATH 211: 9-6 WORKSHEET

(1) Take the area between $y = \sin x$ and the x-axis for x from 0 to π. Rotate this shape around the x axis. What is the volume of the resulting solid?

(2) Give the volume of the solid paraboloid obtained by rotating the region bounded by the x-axis, the y-axis, and the curve $y = 1 - x^2$ around the y-axis.

(3) Rotate the region bounded by $y = x^2$ and $x = y^2$ around the x-axis. What is the volume of the resulting solid. Do you get a different volume if you instead rotate around the y-axis? Why or why not?