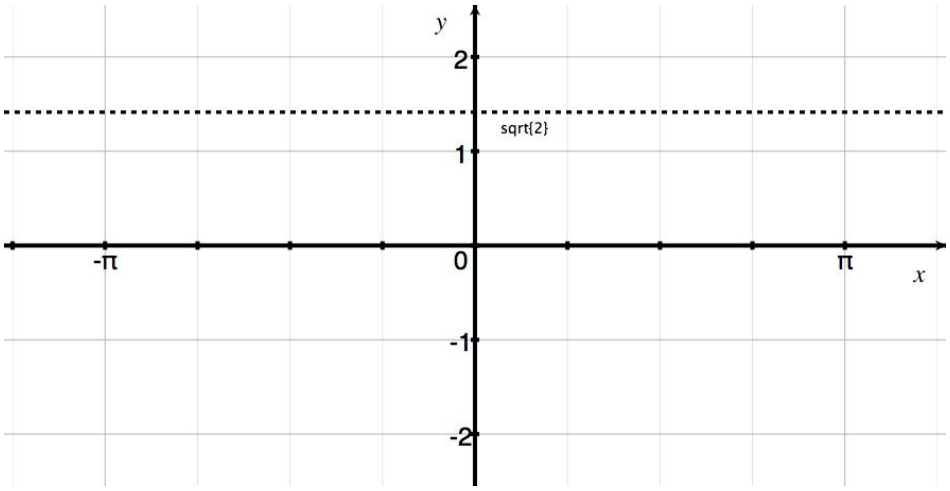
Quiz 4
Math 252

Show *all* your work (algebraically, geometrically, or calculus) for the following. Since the answer is sometimes given to you, it really is the supporting work that is being graded.

1. Let $f(x) = \sec x$ and $g(x) = \sqrt{2}$.

   (a) [1] Carefully, draw the area bounded by the graphs of f and g below.



   (b) [4] Find the volume of the solid obtained by rotating the region bounded by the graphs of f and g around the x-axis.

2. [5] Let X be the solid that was described in Wednesday's lecture and depicted below. That is, X has a circular base of radius 1. Parallel cross sections perpendicular to the base are equilateral triangles. Find the volume of the solid. *Hint: the answer is* $\frac{4\sqrt{3}}{3}$.