

Name: _____

Math 125 Quiz 3

May 5, 2006

1. The base of S is made up of the two regions bounded by $y = \sin(x)$ and the x-axis for $0 \leq x \leq 2\pi$. Cross sections perpendicular to the x-axis are isosceles right triangles. The right angle of each triangle is on the x-axis.

What is the volume of S? (Fun trigonometric fact of the day: $\sin^2(x) = \frac{1 - \cos(2x)}{2}$.)

2. Let R be the region bounded by $y = x^2$, the y -axis, and the line $y = b$ for some $b > 0$. Let S be the solid obtained by rotating the region R about the x -axis. What value of b gives the solid S a volume of $\frac{128\pi}{5} = 25.6\pi$?