**MATH 162** **Practice Quiz 1C**

***1.*** Sketch the region in the first quadrant bounded by the x-axis, the y-axis, the line  and the curve . This region is rotated about the y-axis. Using the *shell method*, write a definite integral that expresses the volume of this solid of revolution. You *need not* evaluate this integral.

***2.*** The base of a certain solid is the disk x2 + y2 ≤ 25 in the xy-plane. Each cross-section of the solid cut out by a plane perpendicular to the x-axis is an isosceles right triangle with its hypotenuse on the base of the solid. Express the volume of the solid as a definite integral. *Do not evaluate.*

***3.*** Consider the region in the xy-plane bounded by the parabola y = x2 and the line y = 36. Revolve the region about the line x = 11. Using the *washer method* express the *volume* as a definite integral. *Do not evaluate.* Be certain to sketch the region.

***Extra Credit:*** A solid is generated by revolving about the x-axis the region bounded by the graph of the positive continuous function y = f (x), the x-axis, and the fixed line x = a and the variable line x = b where b > a.

Its volume, for all *b*, is b2 – ab. Find the function f(x).