Calculus   Worksheet #1   Unit 11   _____

Use "disks" to find the volume generated by rotating the given region about the given line.
For each problem, you must
  a) sketch the generating region, showing a typical generating rectangle,
  b) write an expression for the volume generated by this rectangle,
  c) express the exact volume of the solid as a definite integral, and
  d) evaluate the integral.
Show all of your work neatly organized on graph paper.

1.   The region in the first quadrant bounded by $y = 4 - x^2$ and the coordinate axes is rotated about the (A) x-axis ; (B) y-axis.

2. The region in the first quadrant bounded by $x = y^3$, the x-axis, and the line $x = 8$ is rotated about the   (A) x-axis ; (B) line $x = 8$.

3. The region between $y = x^2 - 4x + 5$ and $y = 5$ is rotated about the line $y = 5$.