

## Calculus Class 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  $x + 2y = 10$  and the coordinate axes is rotated about the (A) x-axis ; (B) y-axis.**

**2. The region in the first quadrant bounded by  $x = y^2$ , the x-axis, and the line  $x = 9$  is rotated about the (A) x-axis ; (B) line  $x = 9$ .**