Present neatly ~~on separate paper~~. Justify for full credit. No Calculators.

Name _____ Score _____ A (25 minutes)

1) Sketch the region enclosed by the given curves and find its area.

$$x = 2y^2, \quad x = 4 + y^2$$

2) Each integral represents the volume of a solid. Describe the solid completely.

$$\pi \int_{-1}^{1} (1 - y^2)^2 \, dy$$

3) Find the volume of the described solid.

The base of S is the region enclosed by the parabola $y = 1 - x^2$ and the x-axis. Cross-sections perpendicular to the y-axis are squares.

4) Choose an appropriate method to find the volume of the solid of revolution.

$$x = y^2 + 1, \; x = 2; \quad \text{about } y = -2$$

Present neatly ~~on separate paper~~. Justify for full credit. No Calculators.

Name _____ Score _____ F (25 minutes)

1) Sketch the region enclosed by the given curves and find its area.

$$x = y^4, \quad y = \sqrt{2 - x}, \quad y = 0$$

2) Each integral represents the volume of a solid. Describe the solid completely.

$$\pi \int_0^{\pi/2} [(1 + \cos x)^2 - 1^2]\, dx$$

3) Find the volume of the described solid.

The base of S is an elliptical region with boundary curve $9x^2 + 4y^2 = 36$. Cross-sections perpendicular to the x-axis are isosceles right triangles with hypotenuse in the base.

4) Choose an appropriate method to find the volume of the solid of revolution.

$$y = x^3,\ y = 0,\ x = 1; \quad \text{about } y = 1$$