MATH 102
QUIZ # 3

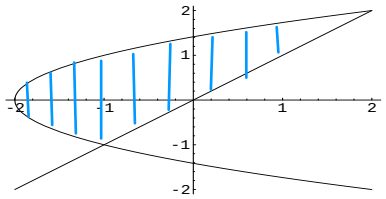
NAME: ..... SEC. #: . . . . . .

ID #: .....

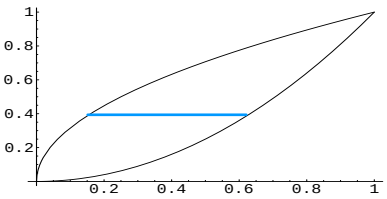
Q1. Find the area of the region bounded by $y^2 = x + 2$ and $y = x$.

$$y^2 = y + 2 \Longrightarrow y = -1, \quad y = 2$$

$$A = \int_{-1}^{2} (y - (y^2 - 2))\, dy = \ldots = \frac{9}{2}$$



Q2. Sketch the region enclosed by the curves $y = x^2$ and $x = y^2$, then find the volume of the solid that results when this region is revolved about the y-axis.



Using the method of washers perpendicular to the y-axis

$$V = \int_{0}^{1} \pi((\sqrt{y})^2 - (y^2)^2)\, dy = \frac{3\pi}{10}$$