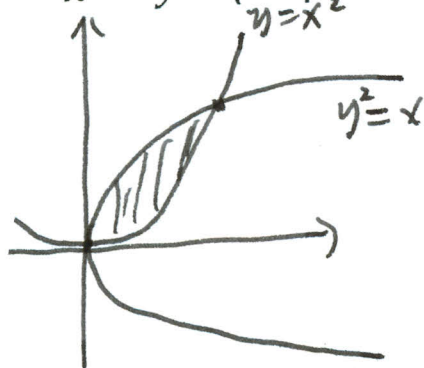


the area of the region enclosed by the curves  $y = x^2$

$x = y^2$ . (10 points)



draw the picture and we see that ~~the~~ region is in the first quadrant.

so the variable, the two functions

$$f(x) = x^2, \quad g(x) = \sqrt{x}$$

intersection points:

$$x^2 = \sqrt{x} \Rightarrow \begin{array}{ll} x=0 & \text{and} \quad x=1 \\ y=0 & \quad \quad y=1 \end{array}$$

$$\text{When } 0 \leq x \leq 1 \quad \sqrt{x} \geq x^2$$

$$\begin{aligned} \text{so } A &= \int_0^1 (\sqrt{x} - x^2) dx \\ &= \left( \frac{1}{\frac{1}{2}+1} x^{\frac{1}{2}+1} - \frac{1}{3} x^3 \right) \Big|_0^1 \\ &= \frac{2}{3} - \frac{1}{3} = \boxed{\frac{1}{3}} \end{aligned}$$