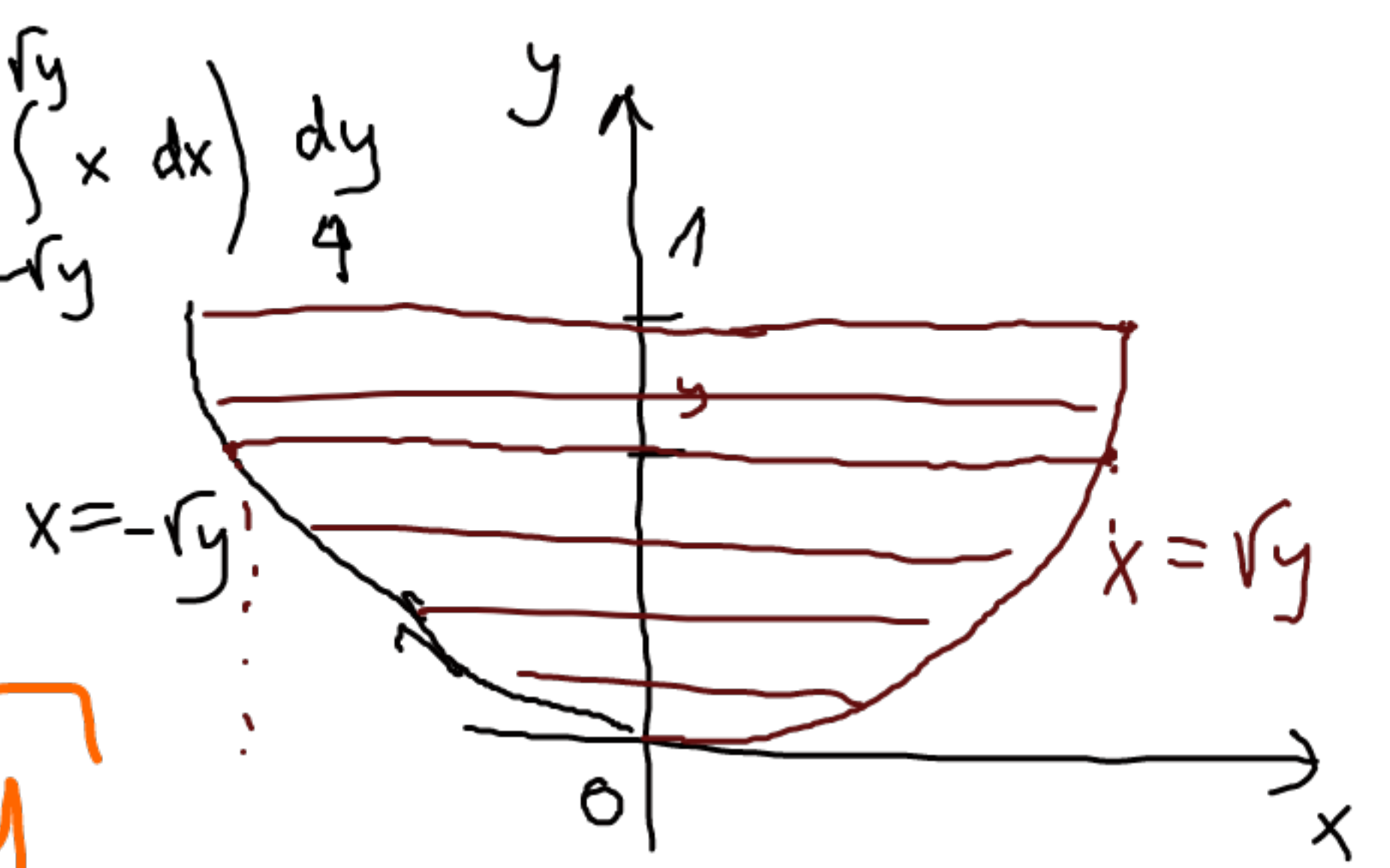


$$\int_0^1 dy \int_{-\sqrt{y}}^{\sqrt{y}} xy \, dx = \int_0^1 dy \, y \int_{-\sqrt{y}}^{\sqrt{y}} x \, dx = \int_0^1 \left(y \int_{-\sqrt{y}}^{\sqrt{y}} x \, dx \right) dy$$



$$\int_{-\sqrt{y}}^{\sqrt{y}} x \, dx = \left[\frac{x^2}{2} \right]_{-\sqrt{y}}^{\sqrt{y}} = \frac{(\sqrt{y})^2}{2} - \frac{(-\sqrt{y})^2}{2} = \frac{y}{2} - \frac{y}{2} = 0$$

for $y \in [0, 1]$

$$-\sqrt{y} \leq x \leq \sqrt{y}$$

$$\rightarrow \frac{x = -\sqrt{y}}{x^2 = y}$$

$$\frac{x = \sqrt{y}}{x^2 = y}$$

$$\int_0^1 0 \, dy = [0] = 0 - 0 = 0$$