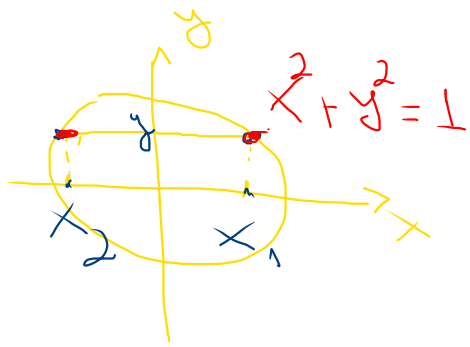


$$A(y) = \frac{b \cdot h}{2} = \frac{b^2}{2} = \frac{(\sqrt{1-y^2} - (-\sqrt{1-y^2}))^2}{2}$$

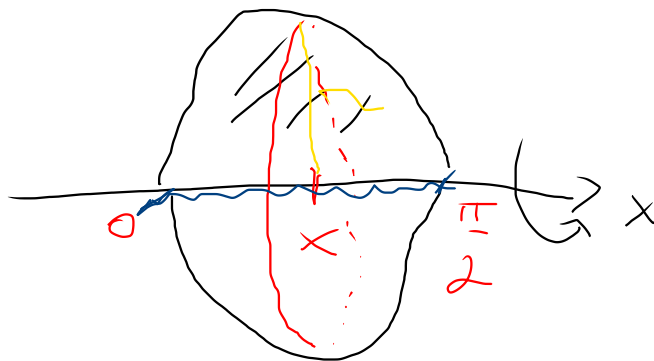
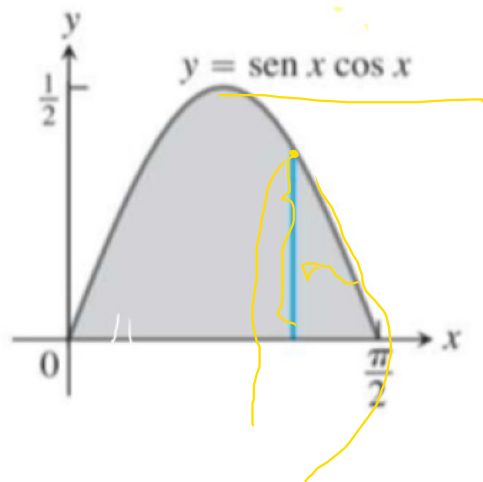
$$A(y) = \frac{4(1-y^2)}{2} = 2(1-y^2)$$



$$b = x_1 - x_2$$

$$\begin{aligned} x_1 = ? \quad x_2 = ? \quad & x^2 + y^2 = 1 \\ x^2 = 1 - y^2 \quad & x_1 = \sqrt{1-y^2} \\ |x| = \sqrt{1-y^2} \quad & x_2 = -\sqrt{1-y^2} \end{aligned}$$

$$\begin{aligned} V(S) &= \int_{-1}^1 2(1-y^2) dy = 2 \left(y - \frac{y^3}{3} \right) \Big|_{-1}^1 \\ &= 2 \left(1 - \frac{1}{3} \right) - 2 \left(-1 + \frac{1}{3} \right) = \dots = \frac{8}{3} \end{aligned}$$



$$A(x) = \pi r^2$$

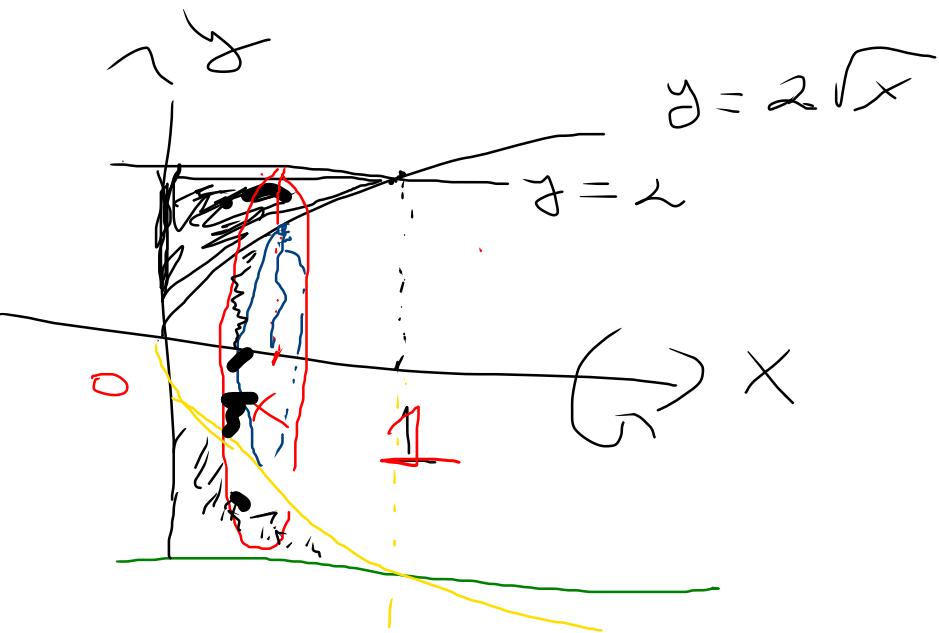
$$r = \text{sen } x \cos x$$

$$V(S) = \int_0^{\pi/2} \pi (\text{sen } x \cos x)^2 dx = \pi \int_0^{\pi/2} \left(\frac{\text{sen}(2x)}{2} \right)^2 dx$$

$$\stackrel{\pi/2}{\pi} \int_0^{\pi/2} \text{sen}^2(2x) dx = \frac{\pi}{4} \int_0^{\pi/2} \frac{1 - \cos 4x}{2} dx = \dots = \frac{\pi^2}{16}$$

$\sin^2 x = \frac{1 - \cos 2x}{2}$

(Método do anel) Determine o volume do sólido obtido com a rotação em torno do eixo- x da região limitada pelas curvas: $y = 2\sqrt{x}$, $y = 2$, $x = 0$. [GeoGebra 2D](#) [GraphSketch.com](#)



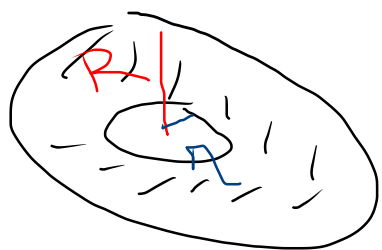
$$A(x) = \pi R^2 - \pi r^2$$

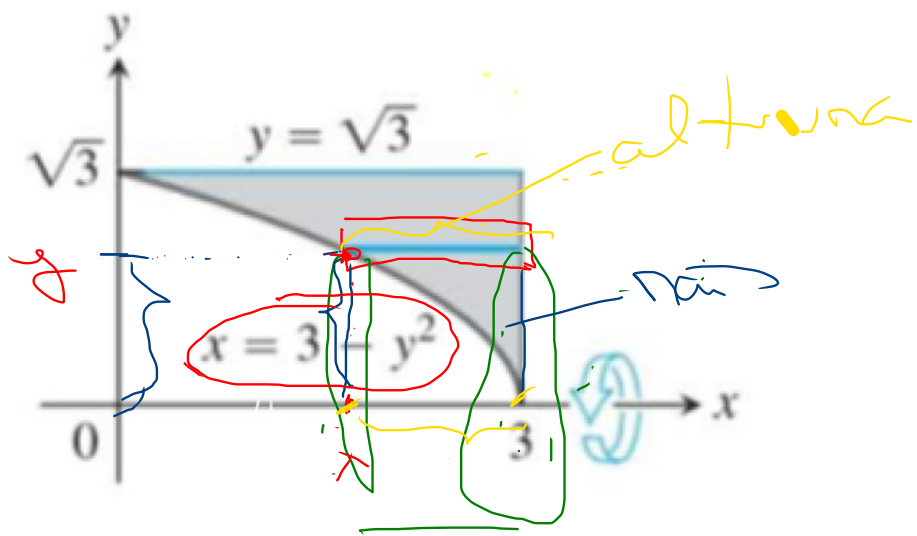
$$R = 2, \quad r = 2\sqrt{x}$$

$$V(s) = \int_0^1 (\pi 4 - \pi 4x) dx$$

Seção transversal:

$$= \dots = 2\pi u^3$$





$$V(S) = \int_a^b 2\pi (\text{raio}) (\text{altura}) dy$$

$$\text{raio} = y$$

$$\text{altura} = 3 - (3 - y^2)$$

$$V(S) = \int_0^{\sqrt{3}} 2\pi (y) (y^2) dy$$

$$= \dots = \frac{9\pi}{2} \cdot 3$$

