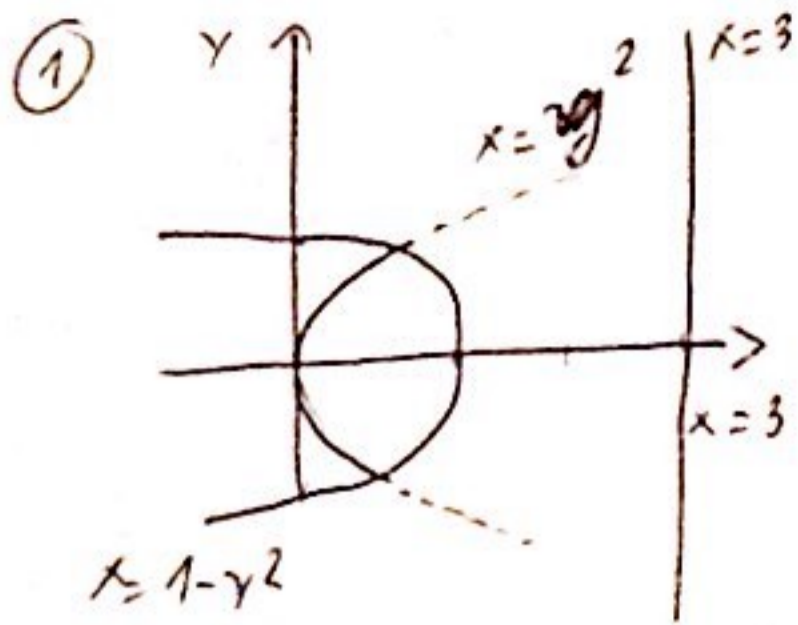


Volumes:

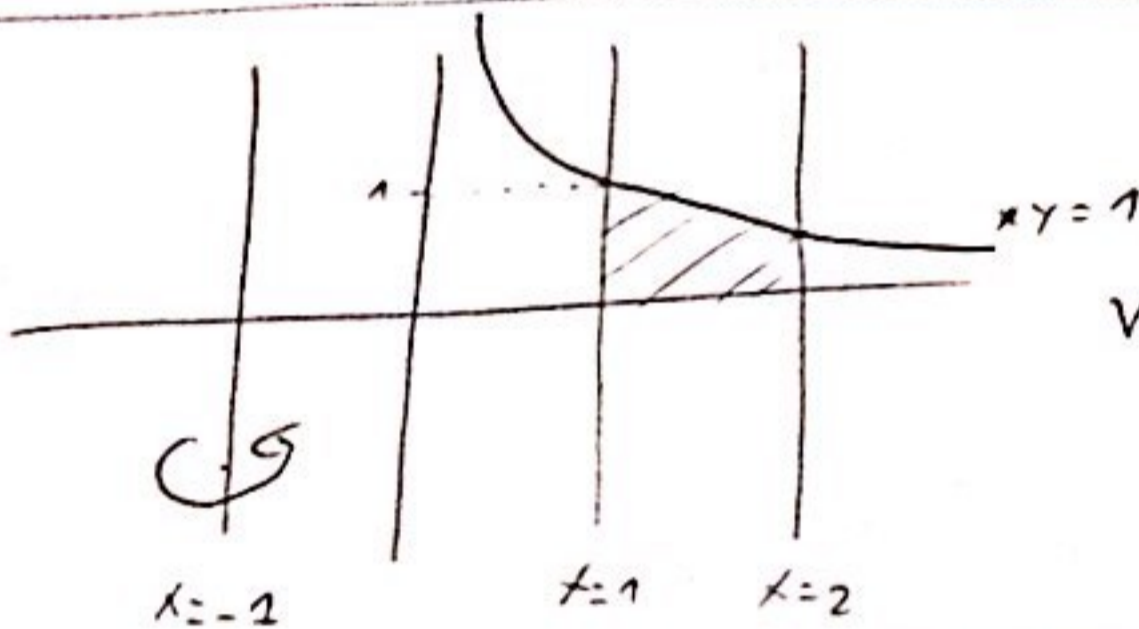


Vamos resolver:  $y^2 = 1 - y^2 \Rightarrow y^2 = \frac{1}{2} \Rightarrow y = \pm \frac{1}{\sqrt{2}}$

Área seção transversal =  $\pi \left( (3 - y^2)^2 - (3 - (1 - y^2))^2 \right) = \pi \left( (3 - y^2)^2 - (2 + y^2)^2 \right)$   
 $= \pi (9 - 6y^2 + y^4 - 4 - 4y^2 - y^4)$   
 $= \pi (5 - 10y^2)$

Volume =  $\int_{-\frac{1}{\sqrt{2}}}^{\frac{1}{\sqrt{2}}} A(y) dy = \left[ \pi \left( 5y - 10 \frac{y^3}{3} \right) \right]_{-\frac{1}{\sqrt{2}}}^{\frac{1}{\sqrt{2}}} = \pi \frac{10\sqrt{2}}{3}$

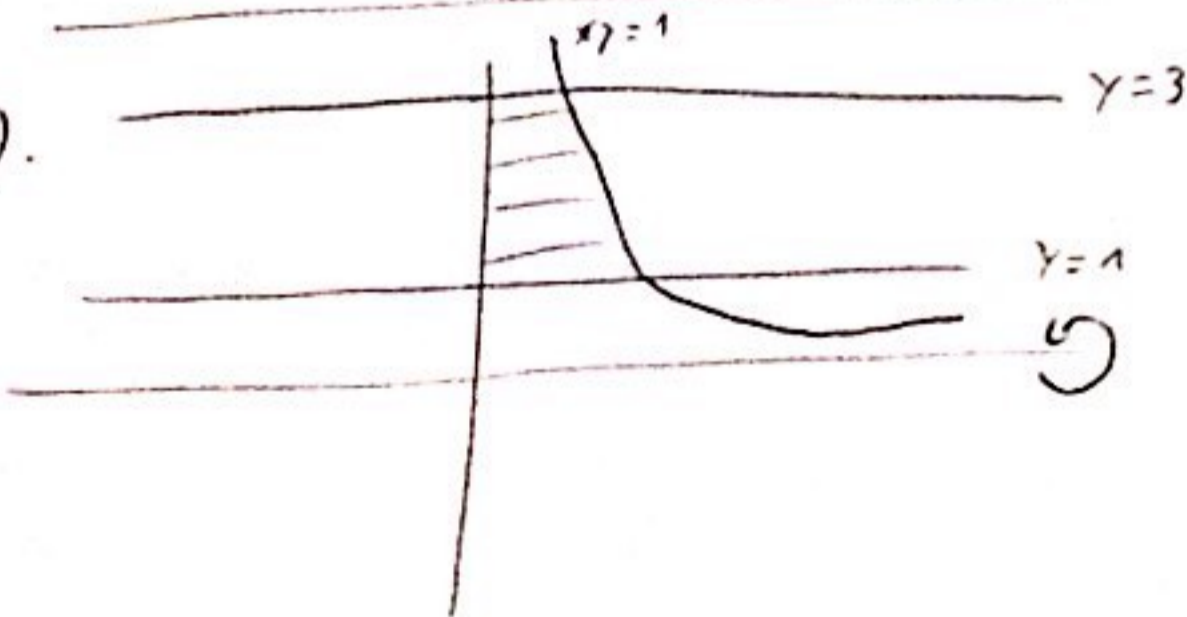
②



Casas cilíndricas

Vol =  $\int_{x=1}^2 2\pi (1+x) \cdot \frac{1}{x} dx = \text{etc...}$

③

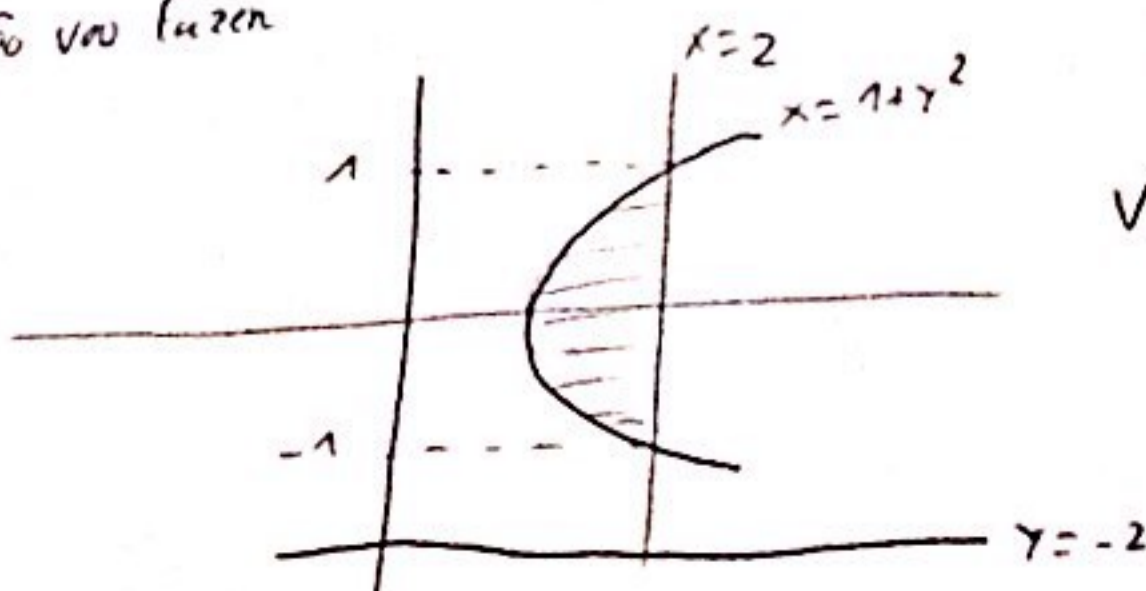


Casas cilíndricas

$V = \int_{y=1}^3 2\pi y \cdot \frac{1}{y} dy = 4\pi$

④ Não vou fazer

⑤



Resolva  $2 = 1 + y^2 \Rightarrow y = \pm 1$

$V = \int_{-1}^1 2\pi (2+y) (2 - (1+y^2)) dy = \text{etc...}$