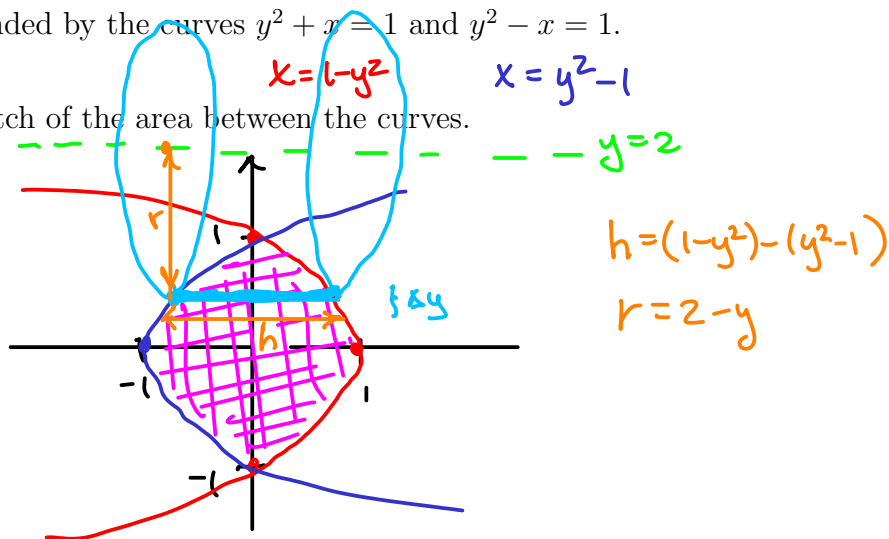


Consider the region bounded by the curves $y^2 + x = 1$ and $y^2 - x = 1$.

Problem 1. Draw a sketch of the area between the curves.



Problem 2. Set up an integral whose value is the area between the curves. Do not evaluate.

$$\int (\text{right curve}) - (\text{left curve}) dy$$

$$\int_{-1}^1 (1 - y^2) - (y^2 - 1) dy$$

Problem 3. The above region is rotated around the line $y = 2$. Use the **shell method** to set up an integral describing the volume of the resulting solid of revolution. Do not evaluate.

$$2\pi \int_{-1}^1 (2 - y) [(1 - y^2) - (y^2 - 1)] dy$$