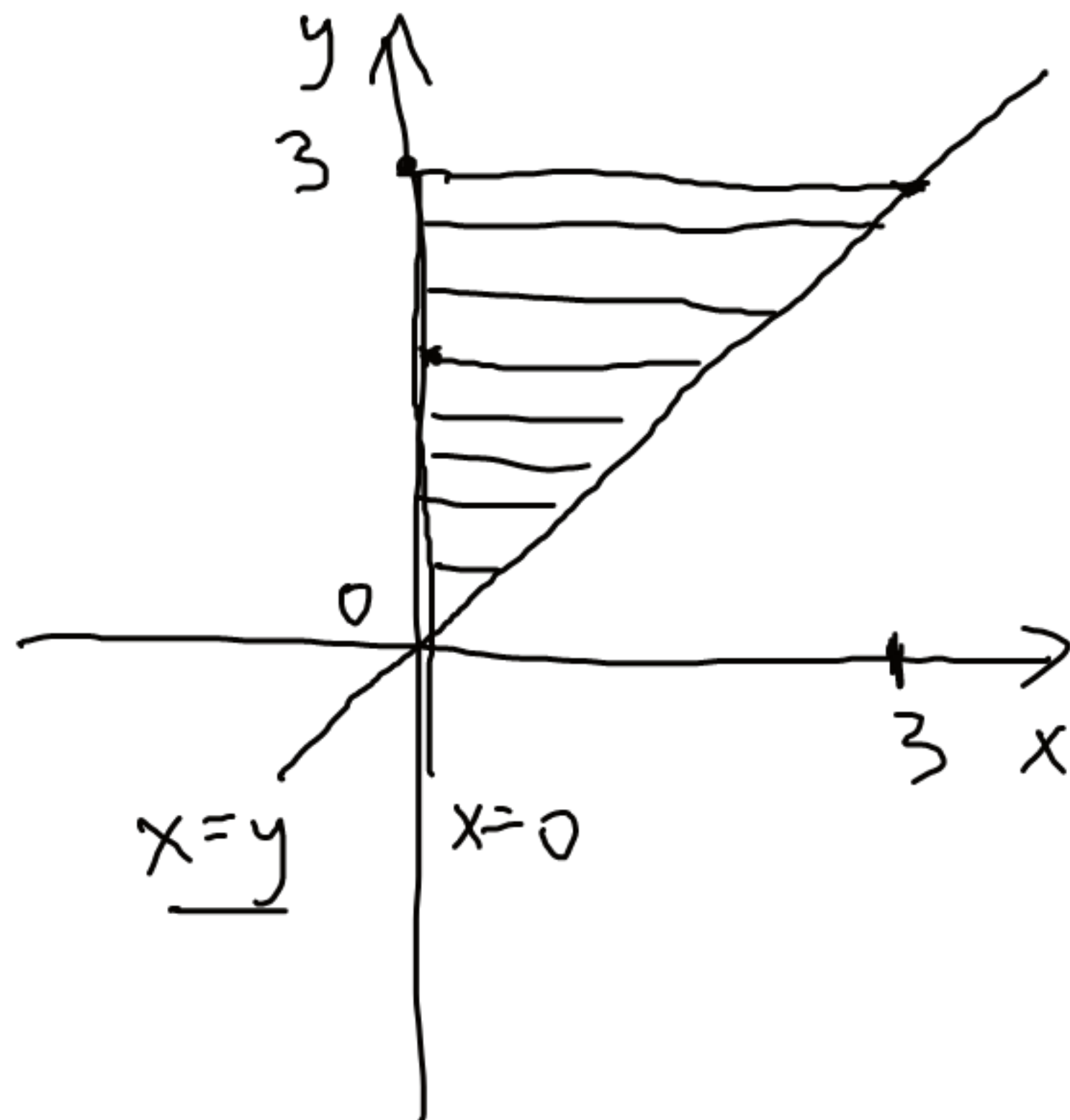


XIVe $\int_0^3 dy \int_0^y \sqrt{y^2+16} dx =$

$$= \int_0^3 dy \left(\sqrt{y^2+16} x \right) \Big|_{x=0}^{x=y} =$$

$$= \int_0^3 \left(\sqrt{y^2+16} y - 0 \right) dy = \left\{ \begin{array}{l} t = y^2 + 16 \\ dA = 2y dy \\ \frac{1}{2} dA = y dy \end{array} \right\}$$



$$= \int_{16}^{25} \sqrt{t} \cdot \frac{1}{2} dt = \frac{1}{2} \cdot \frac{2}{3} t^{3/2} \Big|_{t=16}^{t=25} = \frac{1}{3} \left(25^{3/2} - 16^{3/2} \right) = \frac{1}{3} (125 - 64)$$

$\left(\int t^{1/2} dt = \frac{2}{3} t^{3/2} + C \right)$

$\int 2 dx = 2x + C$