Find the volume of the solid generated by rotating the region bounded by $x=0$, $y=5$ and $y=x^2+1$ about the y-axis. (Use disks.)

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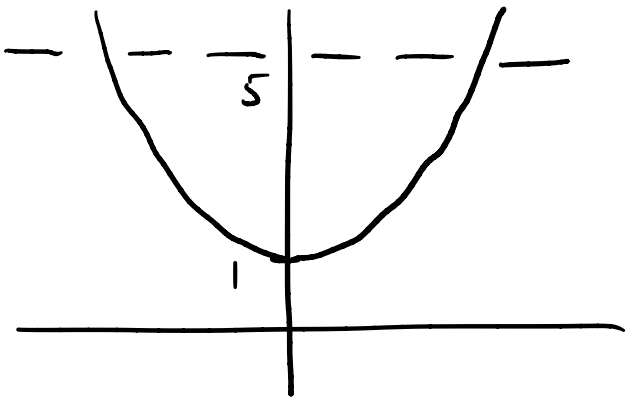

$y = x^2 + 1$

$x^2 = y - 1$

$$V = \int_1^5 \pi x^2 \, dy$$

$$= \int_1^5 \pi (y-1) \, dy$$

$$= \pi \left(\frac{y^2}{2} - y \right) \Big|_1^5$$

$$= \pi \left(\left(\frac{25}{2} - \frac{10}{2} \right) - \left(\frac{1}{2} - \frac{2}{2} \right) \right)$$

$$= \pi \left(\frac{15}{2} - \left(-\frac{1}{2} \right) \right)$$

$$= 8\pi$$