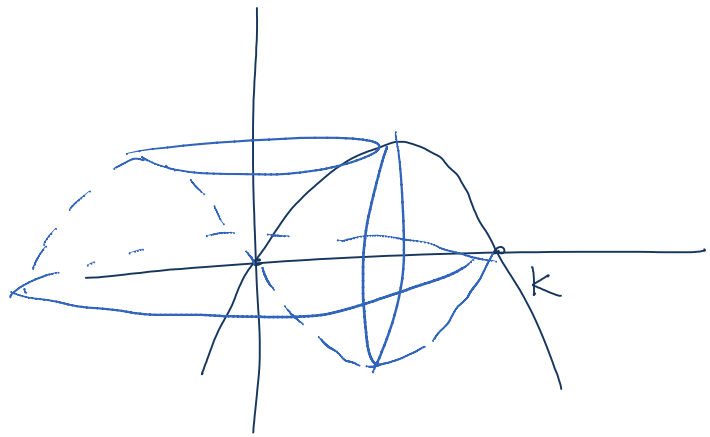


$$y = kx - x^2, \quad k > 0$$



Runt x -axeln:

$$V_x = \pi \int_0^k (kx - x^2)^2 dx = \pi \int_0^k (k^2 x^2 - 2kx^3 + x^4) dx =$$

$$= \pi \cdot \left[\frac{k^2}{3} x^3 - \frac{k}{2} x^4 + \frac{x^5}{5} \right]_0^k =$$

$$= \pi \left(\frac{k^5}{3} - \frac{k^5}{2} + \frac{k^5}{5} \right) = \pi k^5 \left(\frac{10}{30} - \frac{15}{30} + \frac{6}{30} \right) = \frac{\pi k^5}{30}$$

$$V_y = 2\pi \int_0^k x \cdot (kx - x^2) dx = 2\pi \int_0^k (kx^2 - x^3) dx =$$

$$= 2\pi \left[\frac{k}{3} x^3 - \frac{x^4}{4} \right]_0^k = 2\pi \left(\frac{k^4}{3} - \frac{k^4}{4} \right)$$

$$= \frac{\pi k^4}{6}$$

$$V_x = V_y \Rightarrow \frac{\pi k^4}{6} = \frac{\pi k^5}{30}$$

$$k > 0 \Leftrightarrow$$

$$\frac{1}{6} = \frac{k}{30}$$

$$\Leftrightarrow$$

$$\underline{k=5}$$