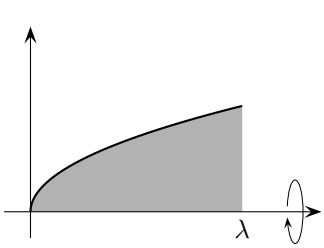
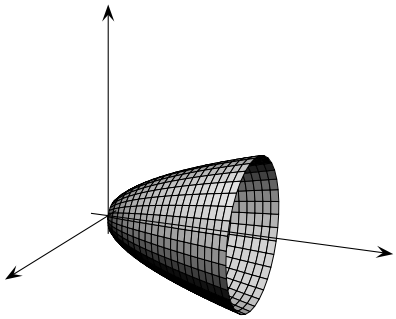
11.21





$$\pi \int_0^\lambda \left(\sqrt{x}\right)^2 dx = \pi \int_0^\lambda x\, dx = \pi \left(\tfrac{1}{2}\, x^2 \Big|_\lambda^0 \right) = \pi \left(\tfrac{1}{2}\, \lambda^2 - \tfrac{1}{2}\, 0^2 \right) = \tfrac{1}{2}\, \pi\, \lambda^2$$

On demande que $\frac{1}{2}\,\pi\,\lambda^2 = \frac{4}{3}\,\pi \cdot 1^3$, c'est-à-dire $\lambda^2 = \frac{8}{3}$.

Attendu que $\lambda > 0$, on conclut que $\lambda = \sqrt{\frac{8}{3}} = \frac{\sqrt{8}}{\sqrt{3}} = \frac{2\sqrt{2}}{\sqrt{3}} = \frac{2\sqrt{6}}{3}$.