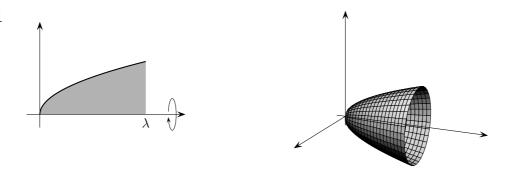
11.21



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

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 $\lambda = \sqrt{\frac{8}{3}} = \frac{\sqrt{8}}{\sqrt{3}} = \frac{2\sqrt{2}}{\sqrt{3}} = \frac{2\sqrt{6}}{3}$.

Analyse : intégrales Corrigé 11.21