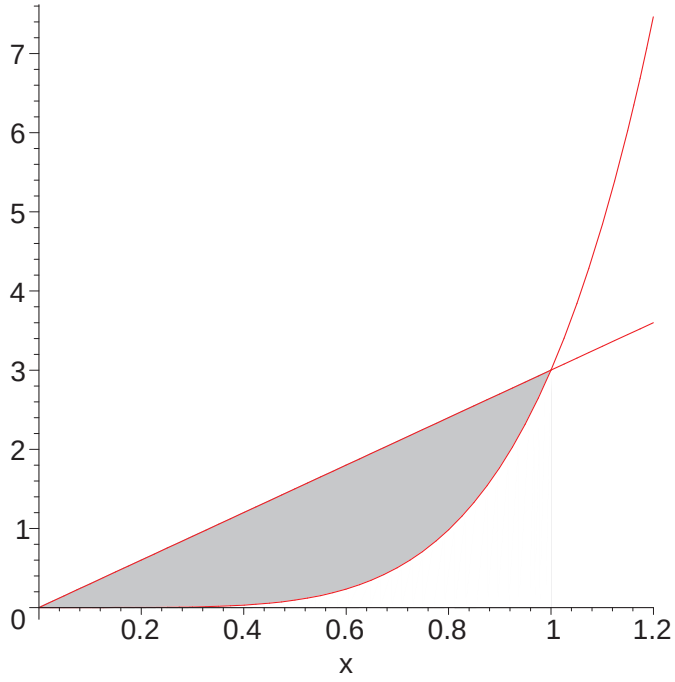
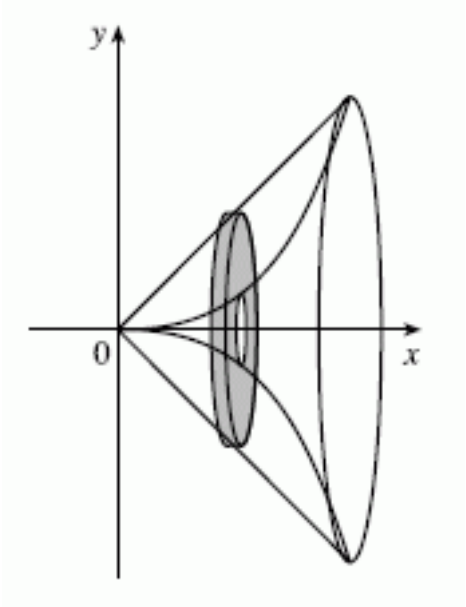
A cross-section is a washer (annulus) with inner radius $3x^5$ and outer radius $3x$, so its area is $A(x) = \pi(3x)^2 - \pi(3x^5)^2 = 9\pi(x^2 - x^{10})$.

$$\begin{aligned} V &= \int_0^1 A(x)\,dx = \int_0^1 9\pi(x^2 - x^{10})\,dx \\ &= 9\pi\left[\tfrac{1}{3}x^3 - \tfrac{1}{11}x^{11}\right]_0^1 = 9\pi\left(\tfrac{1}{3} - \tfrac{1}{11}\right) = \tfrac{24}{11}\pi \end{aligned}$$

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