The formula for the integration of finding the volume between two functions is

$$V = \pi \int_a^b (R^2) dx$$

where R is the top function minus the bottom function.

Example:

Region R is bounded by the lines $y = 4, x = 6$, y-axis, and the x-axis. Region R is rotated around the x-axis.

$$R = 4 - 0$$
$$R = 4$$

$$\begin{aligned} V &= \pi \int_0^6 R^2 dx \\ &= \pi \int_0^6 16 dx \\ &= \pi \cdot 16x|_0^6 \\ &= \pi \cdot (16(6) - 16(0)) \\ &= \pi \dot{9}6 \qquad\qquad = 96\pi \end{aligned}$$