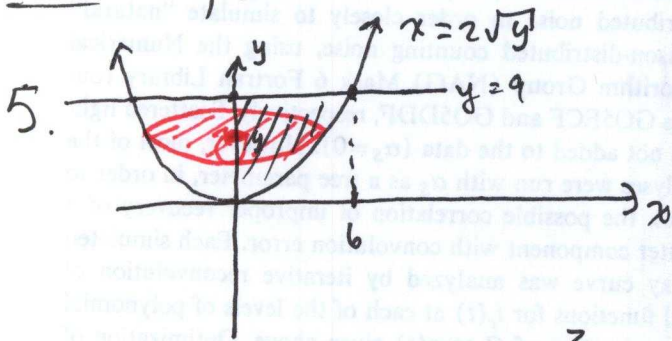


6.2: 5, 29

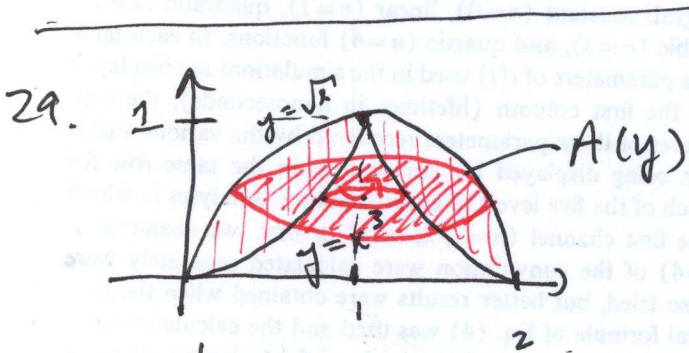


~~2\sqrt{y} = 2\sqrt{y}~~
~~0/4 = 0 - 0 = 0~~

$$V = \int_0^9 \pi (2\sqrt{y})^2 dy$$

$$= \int_0^9 4\pi y dy$$

$$= \frac{4}{2} \pi \frac{y^2}{2} \Big|_0^9 = 2.81 \pi_a = 162\pi.$$



$$V = \int_0^1 \pi (\text{outer radius})^2 - \pi (\text{inner radius})^2 dy$$

outer radius: $y = \sqrt{x}$
 $x = y^2 \Rightarrow (1 - y^2)$

inner radius: $y = x^{1/3}$
 $x = y^{3/2} \Rightarrow (1 - y^{1/3})$

~~$V = \int_0^1 \pi ((y^2)^2 - (y^{1/3})^2) dy$~~
 ~~$= \pi \int_0^1 (y^4 - y^{2/3}) dy$~~
 ~~$= \pi \left[\frac{y^5}{5} - \frac{3}{5} y^{5/3} \right]_0^1$~~
 ~~$= \pi \left(\frac{1}{5} - \frac{3}{5} \right)$~~
 ~~$=$~~

$$V = \int_0^1 \pi ((1 - y^2)^2 - (1 - y^{1/3})^2) dy$$

$$= \int_0^1 \pi [(1 - 2y^2 + y^4) - (1 - 2y^{1/3} + y^{2/3})] dy$$

~~$= \int_0^1 \pi (-2y^2 + y^4 + 2y^{1/3} - y^{2/3}) dy$~~
 ~~$= \pi \left[-\frac{2}{3} y^3 + \frac{y^5}{5} - \frac{3}{4} y^{4/3} + \frac{3}{5} y^{5/3} \right]_0^1$~~

$$= \pi \left[1 - \frac{2}{3} + \frac{1}{5} - 1 + \frac{3}{2} - \frac{3}{5} \right]$$

$$= \pi \left(-\frac{2}{3} + \frac{1}{5} + \frac{3}{2} - \frac{3}{5} \right)$$