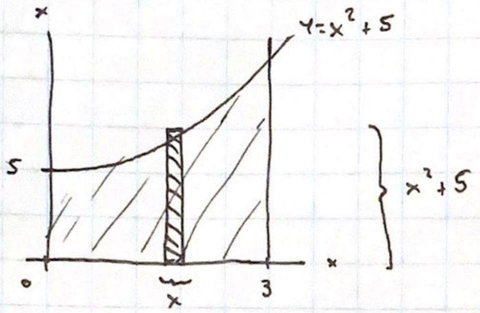
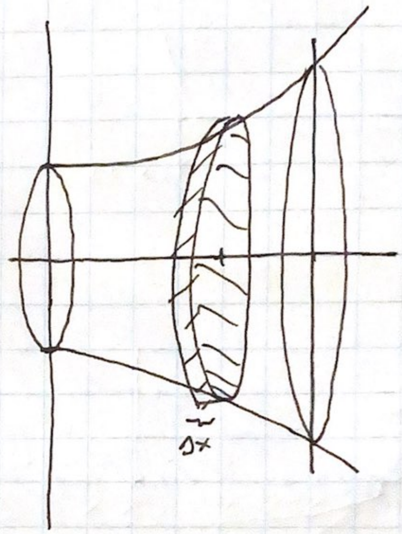




b) $A(x) = \pi\left(x^2+5\right)^2$

$= \pi\left[(x^2+5)(x^2+5)\right]$

$= \pi\left[x^4+10x^2+25\right]$

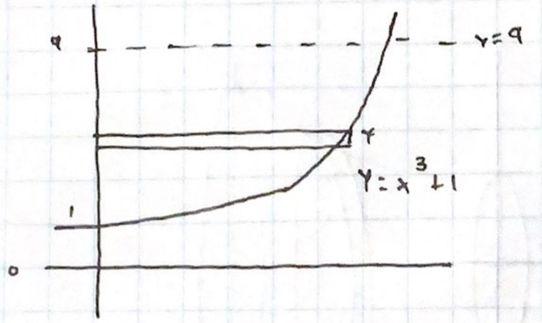
$$V = \int_0^3 \pi\left(x^4+10x^2+25\right)dx \quad = \pi\int_0^3 x^4+10x^2+25\,dx$$

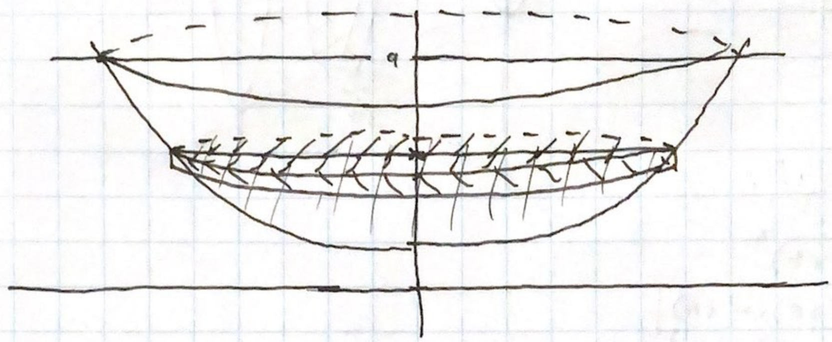
c) $$V = \pi\int_0^3 x^4+10x^2+25\,dx$$

$$= \pi\left[\frac{x^5}{5}+10\frac{x^3}{3}+25x\right]_0^3 \quad = \pi\left[(0)-\left(\frac{3^5}{5}+\frac{10\cdot 3^3}{3}+\frac{25(3)}{1}\right)\right]$$

$\cancel{= -\pi}\,[$

$= 1068\pi/5.$





A slice at height y will get a disk radius x

$$y = x^3 + 1$$

$$y - 1 = x^3$$

$$\sqrt[3]{y-1} = x$$

So the area of the cross/section is $A(y) = \pi\left(\sqrt[3]{y-1}\right)^2$

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

$$V = \int_1^9 A(y)\,dy = \int_1^9 \pi (y-1)^{2/3}\,dy$$

$$= \pi \int_1^9 (y-1)^{2/3}\,dy$$

$$= \pi \int_1^9 y^{2/3} - 1\,dy$$

$$= \pi \left[\frac{3}{5} y^{5/3} - y\right]_1^9$$

$$= \frac{96\pi}{5}$$