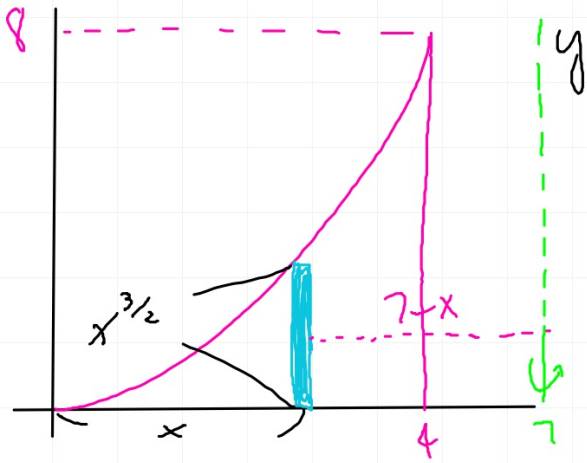
Volumes of Revolution--Shell Method



$y^2 = x^3$ @ $x = 7$

$y = x^{3/2}$

$$V_s = 2\pi \int_0^4 (7-x)\left(x^{3/2}\right) dx$$

SHELL

$2\pi r h$ thickness

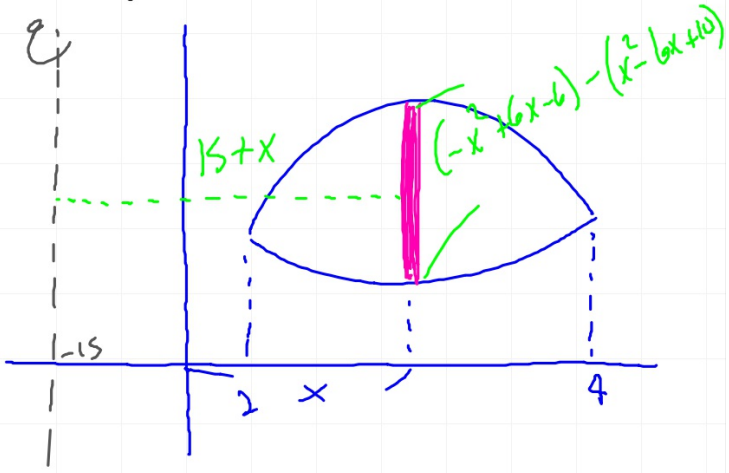
dx dy

Bounds: $y = x^2 - 6x + 10$ and $y = -x^2 + 6x - 6$ & $x = -15$.

I set

$x^2 - 6x + 10 = -x^2 + 6x - 6$

$x = 2$ or $x = 4$



$$V = 2\pi \int_2^4 (15+x)\left[(-x^2+6x-6)-(x^2-6x+10)\right] dx$$