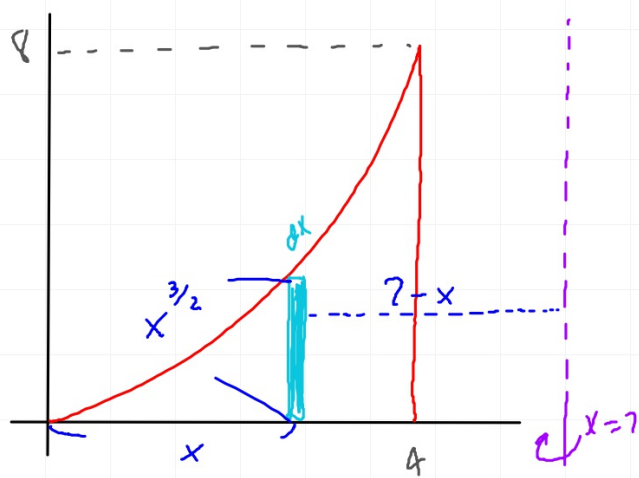


Volumes of Revolution--Shell Method

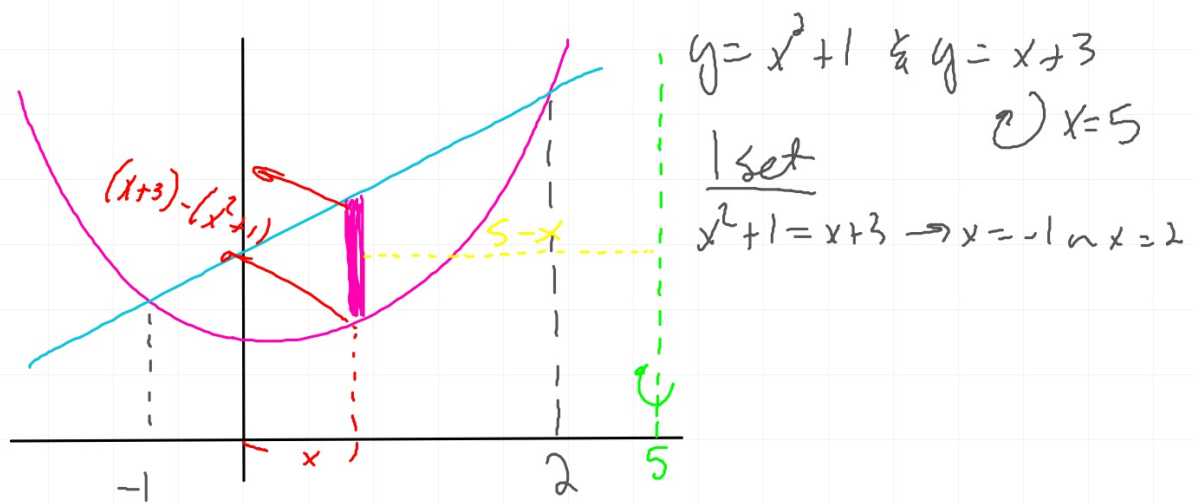


$$y^2 = x^3 \quad \Rightarrow \quad x = 7$$
$$y = x^{3/2}$$

Shell

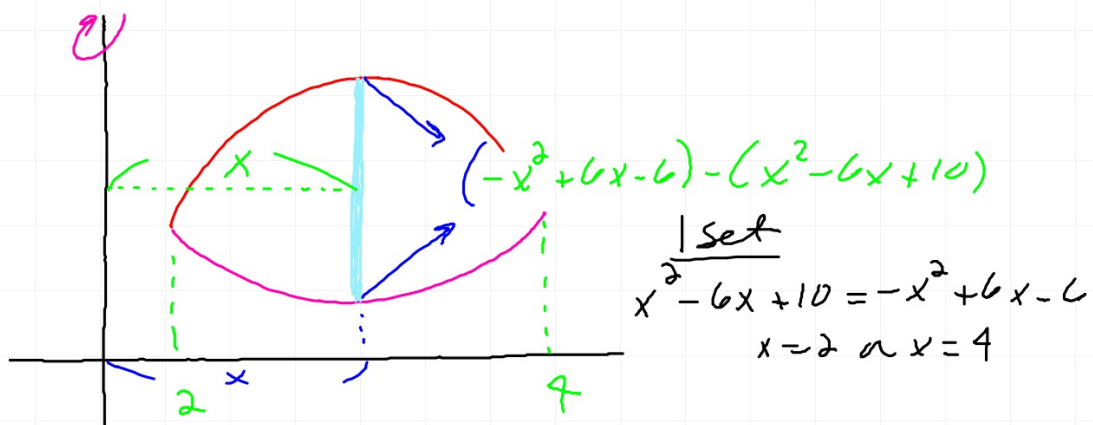
$2\pi \underline{r} h$ thickness

$$V = 2\pi \int_0^7 (7-x) (x^{3/2}) dx$$



$$V = 2\pi \int_{-1}^2 (5-x) [(x+3) - (x^2+1)] dx$$

#22 Bounded: $y = x^2 - 6x + 10$ and $y = -x^2 + 6x - 6$



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