

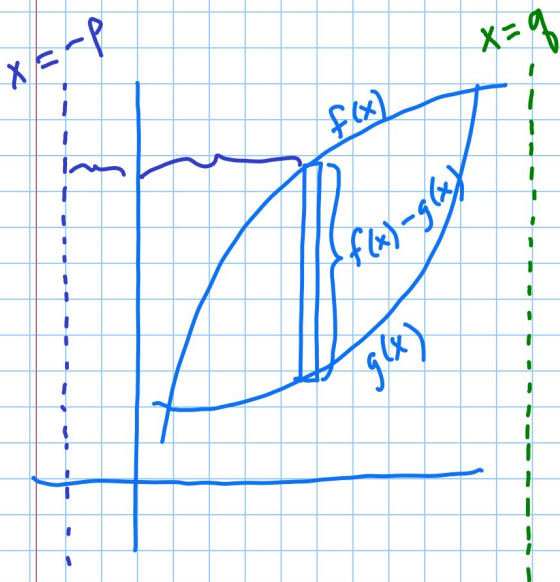
$$A = \int_a^b (f(x) - g(x)) dx$$

Horizontal Axes of Revolution

x-axis: $V = \pi \int_a^b [(f(x))^2 - (g(x))^2] dx$

$y = -c$: $V = \pi \int_a^b [(f(x)+c)^2 - (g(x)+c)^2] dx$

$y = d$: $V = \pi \int_a^b [(d-g(x))^2 - (d-f(x))^2] dx$



Vertical Axes of Revolution

y-axis: $V = 2\pi \int_a^b x (f(x) - g(x)) dx$

$x = -p$: $V = 2\pi \int (x+p) (f(x) - g(x)) dx$

$x = q$: $V = 2\pi \int (q-x) (f(x) - g(x)) dx$

