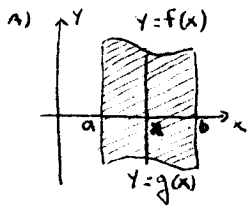
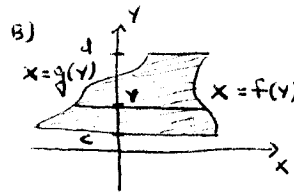


I) AREA



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

(TOP - BOTTOM)

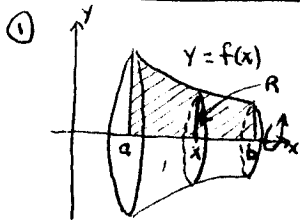


$$A = \int_c^d (f(y) - g(y)) dy$$

(RIGHT - LEFT)

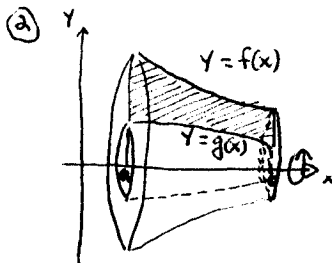
II) VOLUME

A) AROUND THE X-AXIS



$$V = \int_a^b \pi (f(x))^2 dx$$

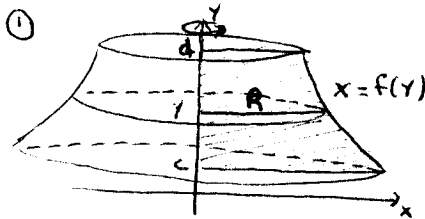
(A TYPICAL SLICE OF THE SOLID IS A CIRCULAR DISC WITH  $A = \pi R^2 = \pi (f(x))^2$ )



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

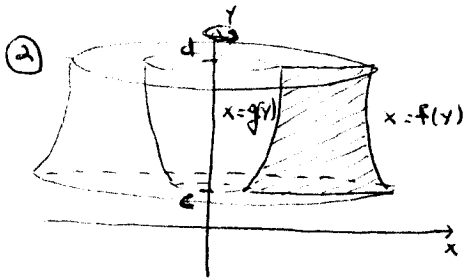
(WHERE  $f(x) \geq g(x) \geq 0$  ON  $[a, b]$ )

B) AROUND THE Y-AXIS



$$V = \int_c^d \pi (f(y))^2 dy$$

(A TYPICAL SLICE OF THE SOLID IS A CIRCULAR DISC WITH  $A = \pi R^2 = \pi (f(y))^2$ )



$$V = \int_c^d \pi ((f(y))^2 - (g(y))^2) dy$$

(WHERE  $f(y) \geq g(y) \geq 0$  ON  $[c, d]$ )