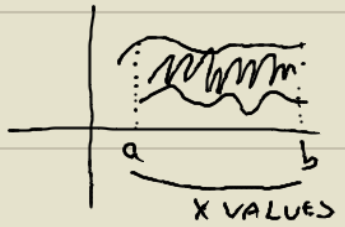
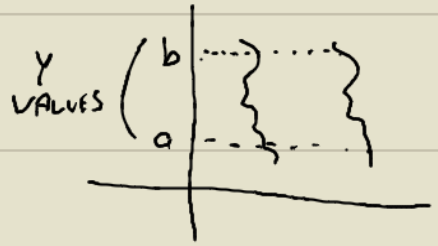
TYPE I



$$\int_a^b (\text{GRAPH ABOVE}) - (\text{GRAPH BELOW})\,dx$$

HAVE X'S

TYPE II



$$\int_a^b (\text{GRAPH TO RIGHT}) - (\text{GRAPH TO LEFT})\,dy$$

HAVE Y'S

1. $y = x^2 - 5x + 4 \quad y = 2x - 2$

FIND POI'S

$x^2 - 5x + 4 = 2x - 2$

$x^2 - 5x - 2x + 4 + 2 = 0$

$x^2 - 7x + 6 = 0$

$(x-1)(x-6) = 0$

$x - 1 = 0 \quad x - 6 = 0$

$x = 1 \quad x = 6$

$$\int_1^6 (\underset{\text{ABOVE}}{2x-2}) - (\underset{\text{BELOW}}{x^2-5x+4})\,dx$$

$$\int_1^6 (2x - 2 - x^2 + 5x - 4)\,dx$$

$$\int_1^6 (-x^2 + 7x - 6)\,dx$$

2. $y = -x^2 + 4 \quad y = 0$

$-x^2 + 4 = 0$

$4 = x^2$

$\pm\sqrt{4} = x$

$\pm 2 = x$

$$\int_{-2}^{2} (\underset{\text{ABOVE}}{-x^2+4}) - (\underset{\text{BELOW}}{0})\,dx$$

$$= \int_{-2}^{2} (-x^2 + 4)\,dx$$