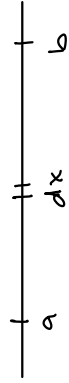


1 integral

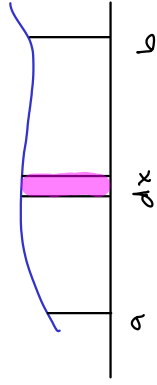
length:

$$\int_a^b dx = \int_a^b 1 dx = x \Big|_a^b = b - a$$



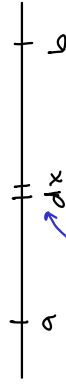
area: (under graph)

$$\int_a^b f(x) dx$$



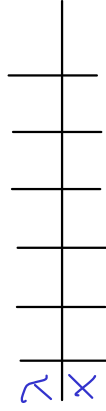
mass: (linear)

$$\int_a^b \lambda(x) dx$$



total chocolate

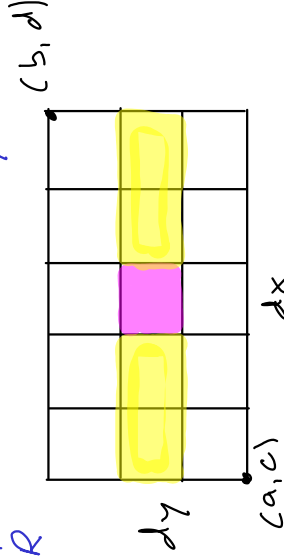
(continuous vs discrete)



2 integral

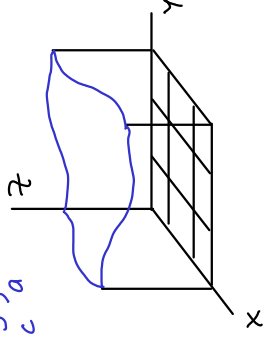
area:

$$\int_R dA = \iint_R 1 dx dy$$



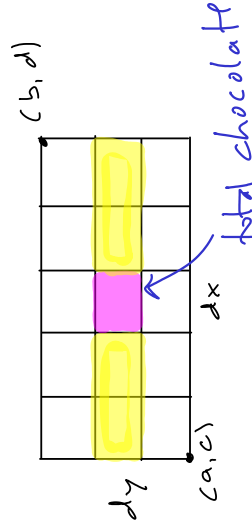
volume: (under graph)

$$\int_a^b \int_c^d f(x,y) dx dy$$



mass: (surface)

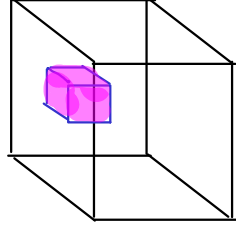
$$\int_a^b \int_c^d \sigma(x,y) dx dy$$



3 integral

volume:

$$\int_D dV = \iiint_{a,b,c}^d f dx dy dz$$



(hypervolume ...)



mass: (volume)

$$\int_D \rho dV = \iiint_{a,b,c}^d \rho dx dy dz$$

