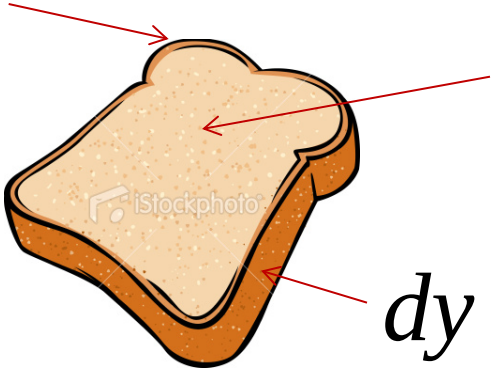
curve f(x,y),
where y fixed



area of cross- section

$$= \int_a^b f(x,y)dx$$

dy

Iterated integral

volume of

$$= \left[\int_a^b f(x,y)dx \right] dy$$

volume of

$=$ volume of

$$\iint_R f(x,y)dA = \int_c^d \left[\int_a^b f(x,y)dx \right] dy$$

Iterated integral

http://calculus7.com/id34.html