Double Integrals

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Vertical Slices

- We have a function measuring something, bounded by two equations of the form y=T(X), y=B(x)
  - $\int_a^b dx \int_{B(x)}^{T(x)} dy f(x,y)$

Horizontal Slices

- We have a function measuring something, bounded by two equations of the form x=L(x), x=R(x)
  - $\int_c^d dy \int_{L(y)}^{R(y)} dx f(x,y)$

Arithmetic of Integration

- $\iint (f(x,y) + g(x,y))dxdy = \iint f(x,y)dxdy + \iint g(x,y)dxdy$
- $\iint (f(x,y) - g(x,y))dxdy = \iint f(x,y)dxdy - \iint g(x,y)dxdy$
- $\iint Cf(x,y)dxdy = C \iint f(x,y)dxdy$
- $\iint_R f(x,y)dxdy = \iint_{R1} f(x,y)dxdy + \iint_{R2} f(x,y)dxdy$