

# Triple integral

Friday, July 24, 2020 12:22 PM

$$\int f(x) \underline{dx}$$

① Area under  $f(x)$  [2-D]  
✓ ② Mass of a straight wire (thin) (1-D)

$$\iint_R f(x, y) \underline{dA}$$

① volume under  $f(x, y)$  (3-D)  
✓ ② Mass of a thin plate (Lamina) (2-D)

The mass idea works if  $f(x, y)$  &  $f(x)$  is a mass density function

$$\iiint_T \boxed{f(x, y, z)} \underline{dV}$$

① something of region under  $f(x, y, z)$  [4-D]  
 $dV = dx dy dz$   
② Mass of a plate of thickness [3-D]

If  $f(x, y, z)$  is a mass density function

$$\underline{f(x, y, z) =}$$

