

Volume of bread slice

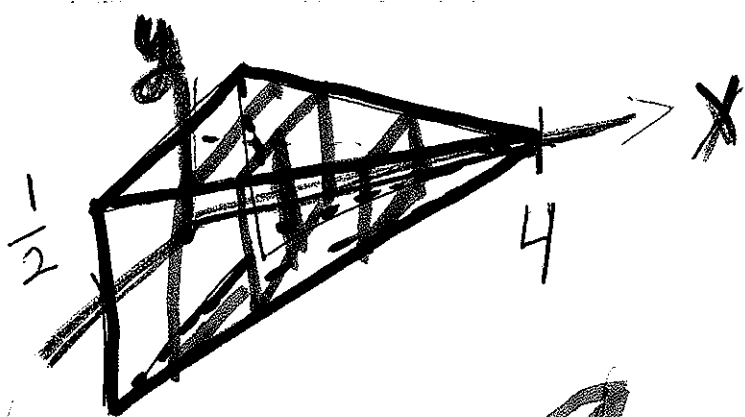
$$= \text{Area} \cdot \text{width}$$

$$= A(x_i) \cdot \Delta x$$

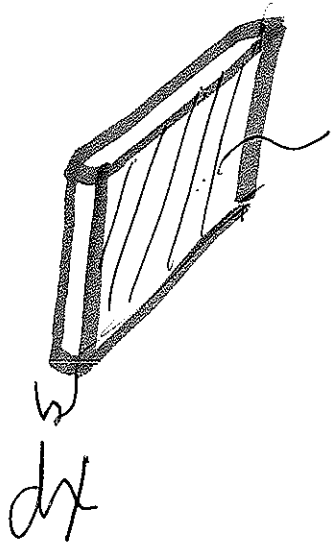
Volume of bread

$$= \lim_{n \rightarrow \infty} \sum_{i=1}^n \underbrace{A(x_i) \Delta x}_{\text{volume}}$$

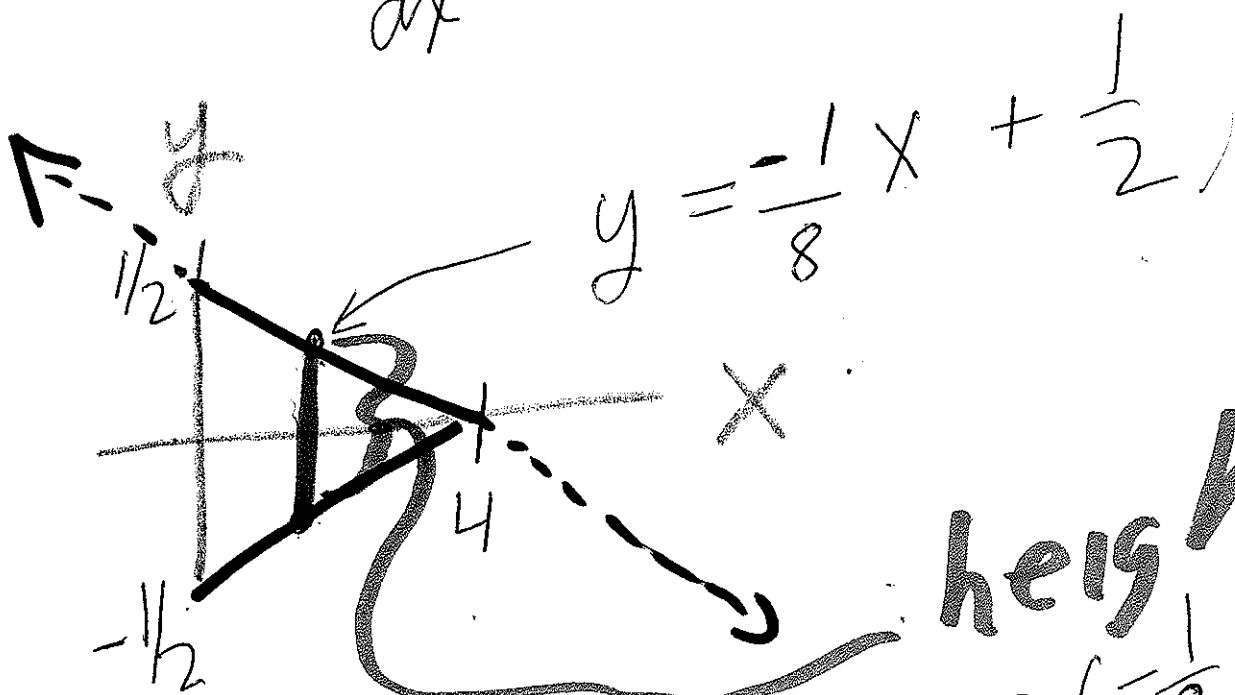
$$= \int_a^b \underbrace{A(x)}_{\text{area}} \underbrace{dx}_{\text{width}} = \text{Volume} \quad 5.8$$



base 1×1
height = 4

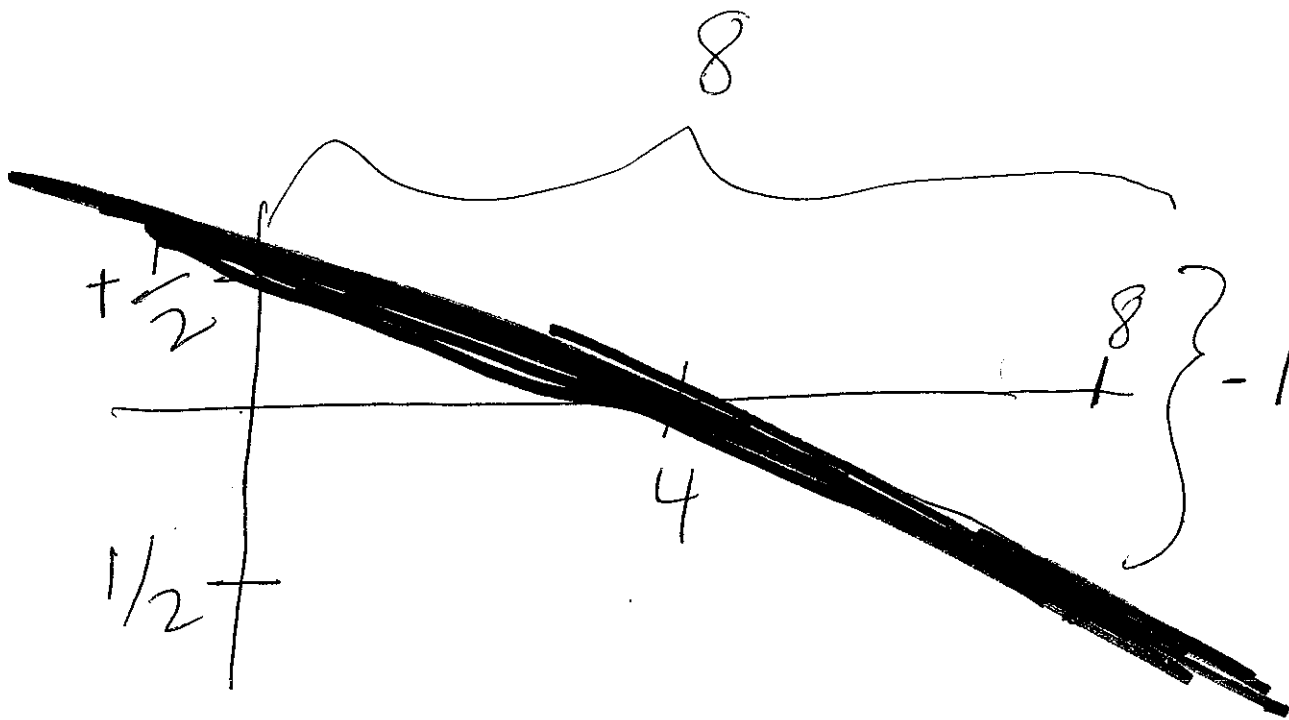


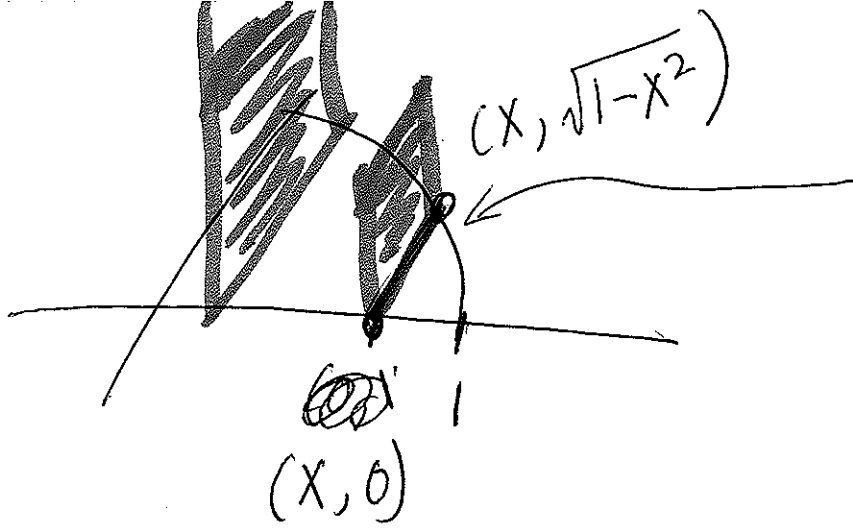
Area of square
= (side)²



height
= $2\left(-\frac{1}{8}x + \frac{1}{2}\right)$

$$\begin{aligned} \text{Volume} &= \int_0^4 \text{Area } dx = \int_0^4 (\text{side})^2 dx \\ &= \int_0^4 \left[2\left(-\frac{1}{8}x + \frac{1}{2}\right) \right]^2 dx \end{aligned}$$





$$x^2 + y^2 = 1$$

$$y = \sqrt{1-x^2}$$

length of side: $\sqrt{1-x^2}$

$$\text{Volume: } \int_0^1 (\text{side})^2 dx$$

$$\text{Volume} = \int_0^1 (\sqrt{1-x^2})^2 dx$$

$$= \int_0^1 (1-x^2) dx$$