Lecture 12

6.2 Volumes

Definition 1. A **cross section** of a solid S is the plane region formed by intersection S with a plane P.

Definition 2. Let S be a solid that lies between planes $x = a$ and $x = b$ If the cross-sectional area of S in the plane P_x through x and perpendicular to the x-axis is $A(x)$, where A is continuous function, then the **volume** of S is

$$V = \lim_{n\to\infty} \sum_{i=1}^{n} A(x_i^*)\Delta x_i = \int_a^b A(x)dx$$

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Solid of Revolution

Definition 3. The solid obtained by rotating (revolving) a plane region about a line is called a **solid of revolution**.