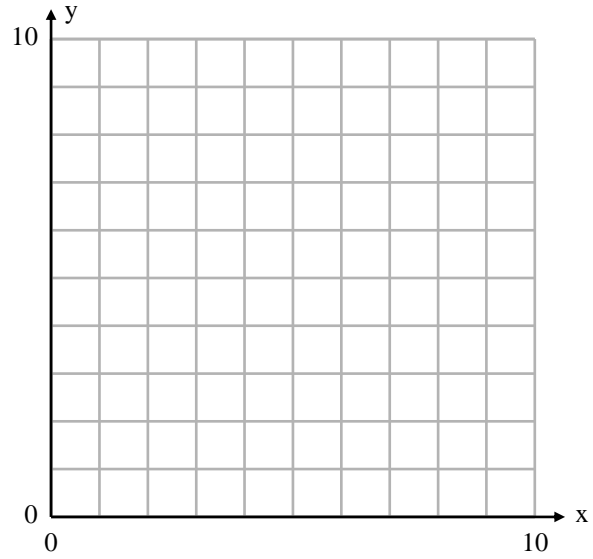


# Limits and Motion: The Area Problem

6-5-08

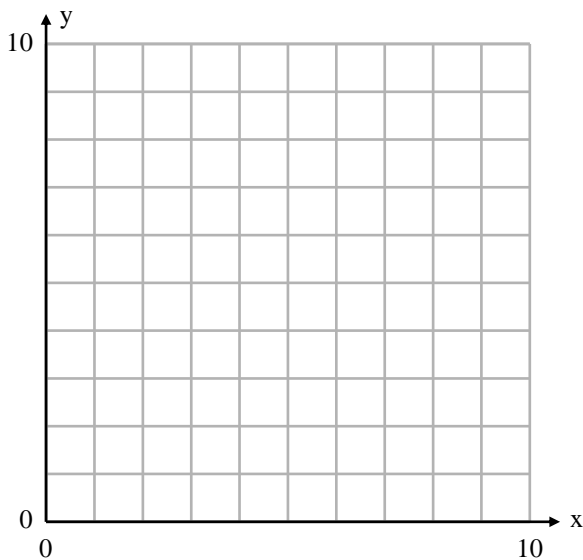
## Definite Integral

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n f(x_i) \Delta x =$$



1. Find the definite integral by computing an area.

$$\int_1^7 0.5x \, dx$$

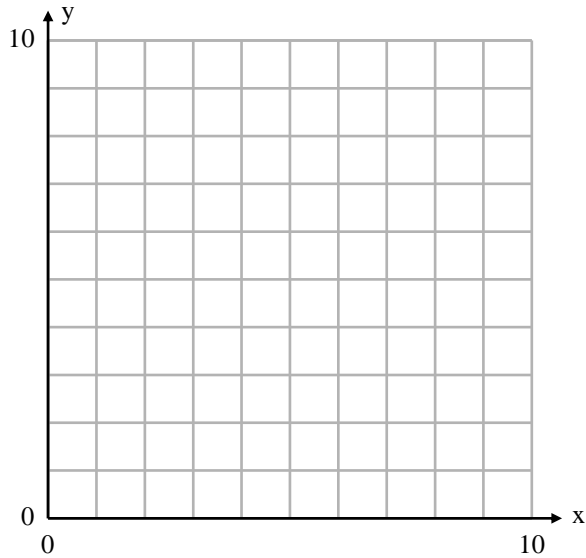


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2. Find the definite integral by computing an area.

$$\int_0^6 \sqrt{36 - x^2} \, dx$$



3. It can be shown that the area enclosed between the x-axis and one arch of the sine curve is 2. Use this fact to compute the definite integral.

$$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \cos \, dx$$

