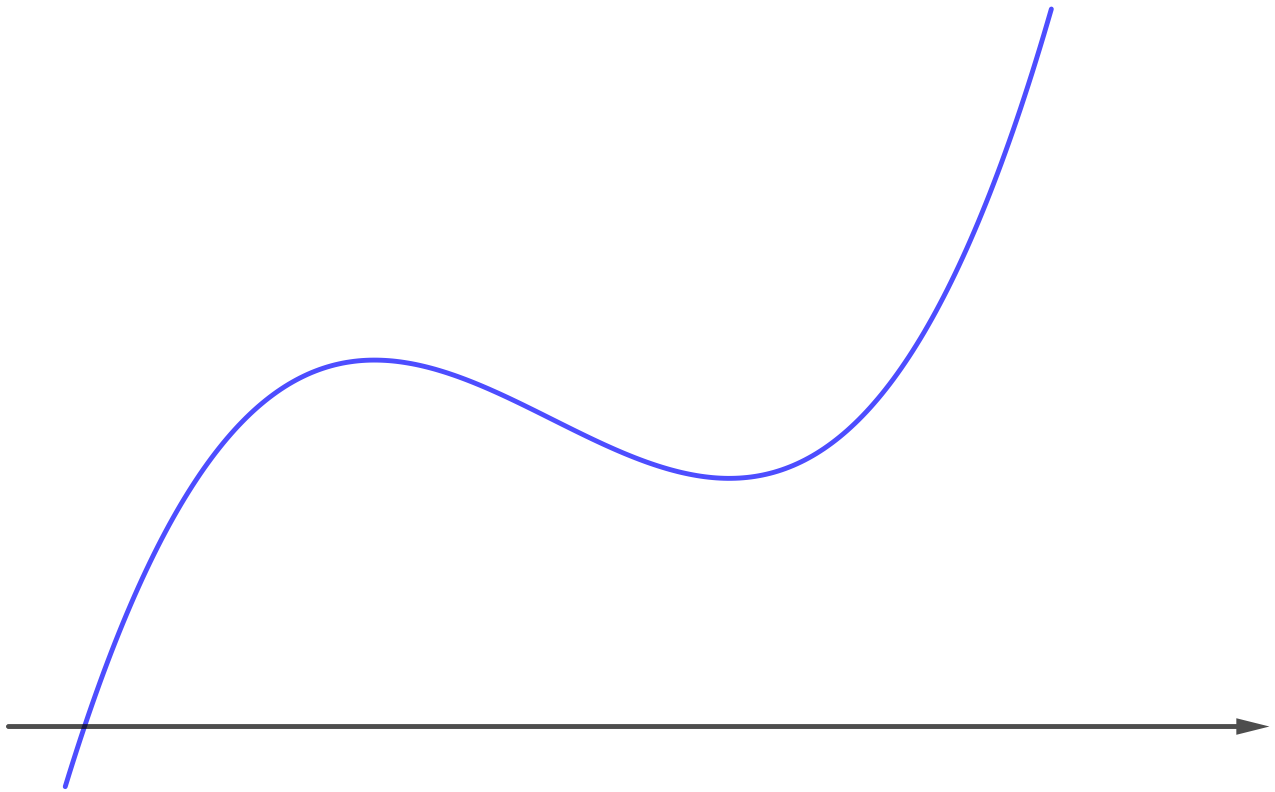
정적분
(Definite Integrals)

Definite Integrals

Start End



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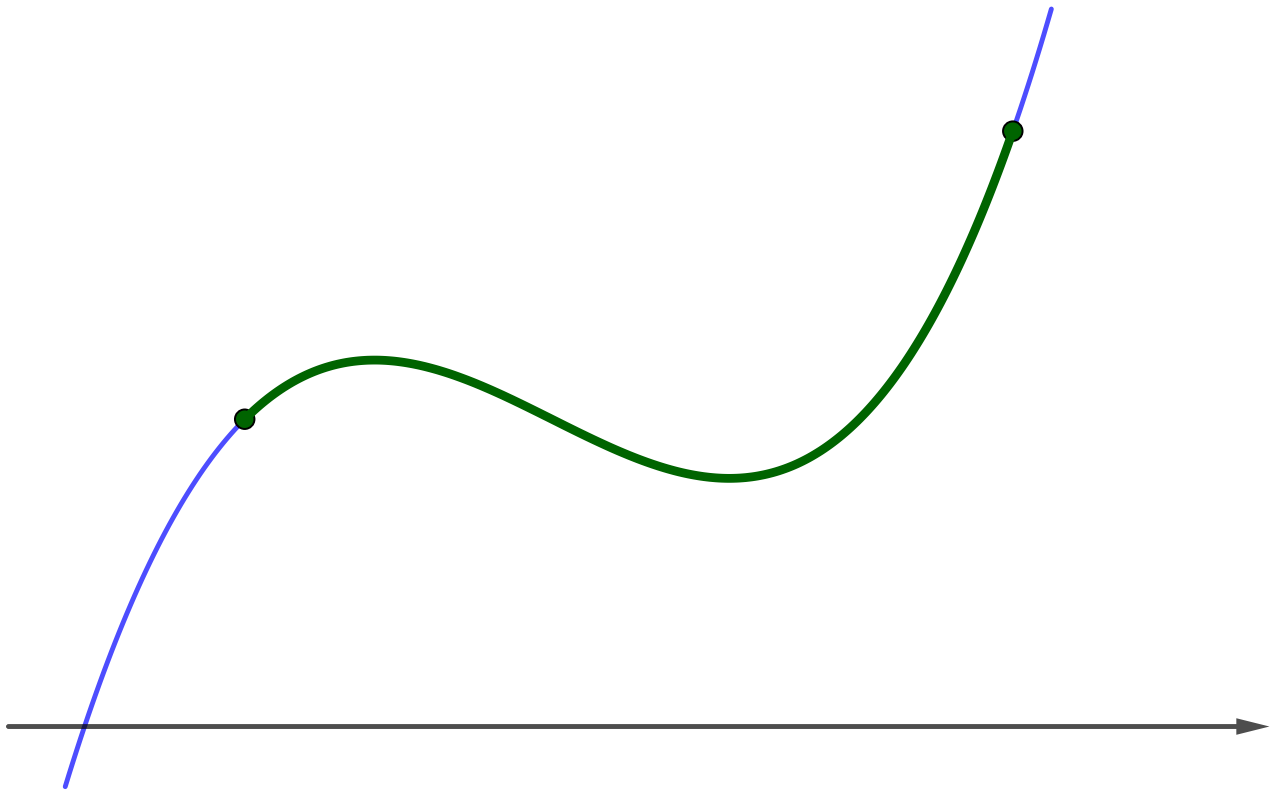
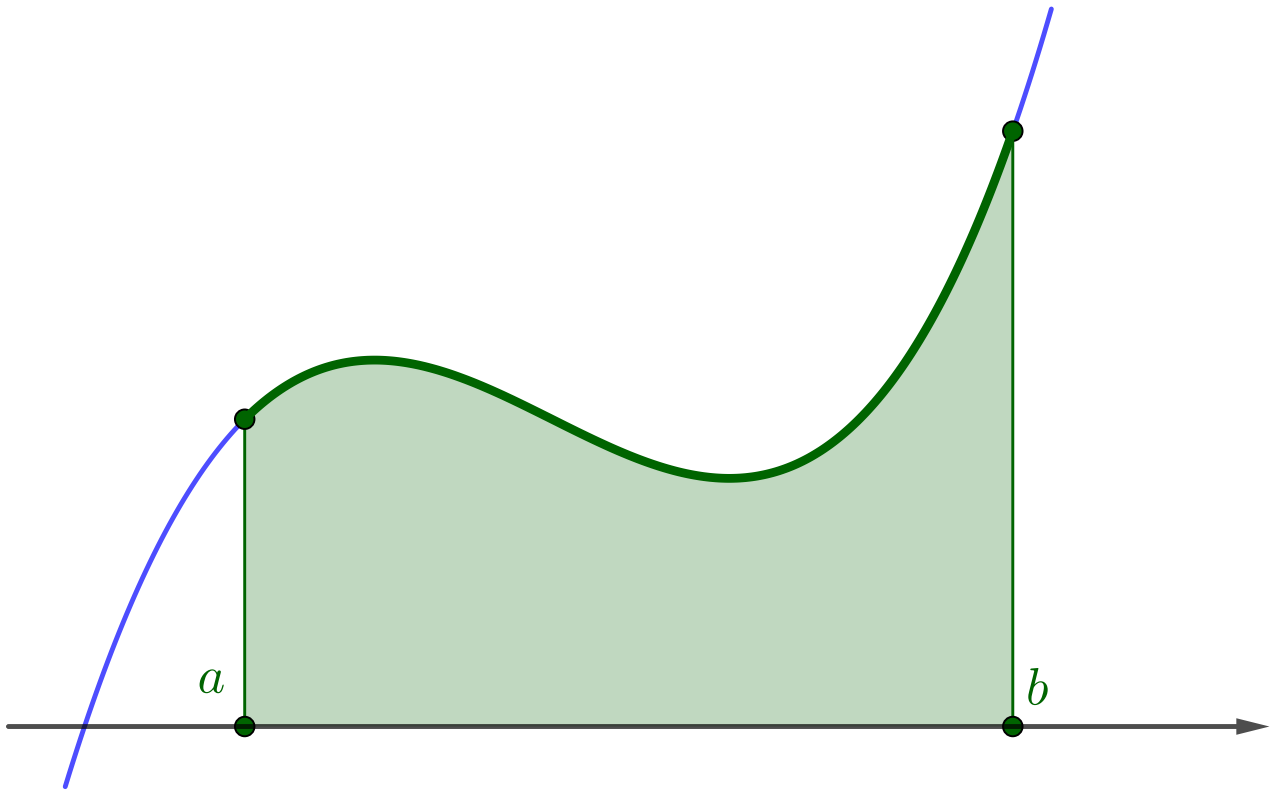
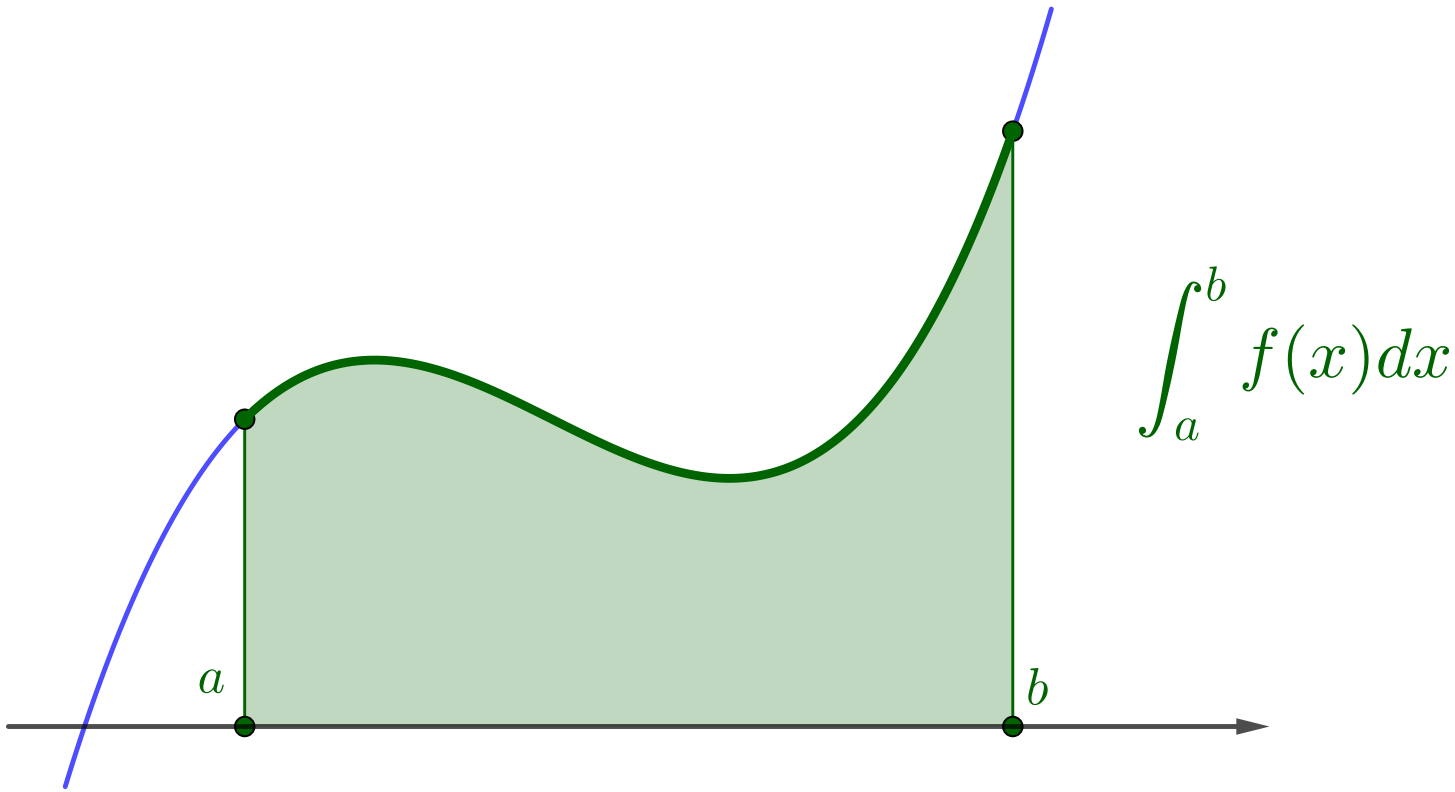
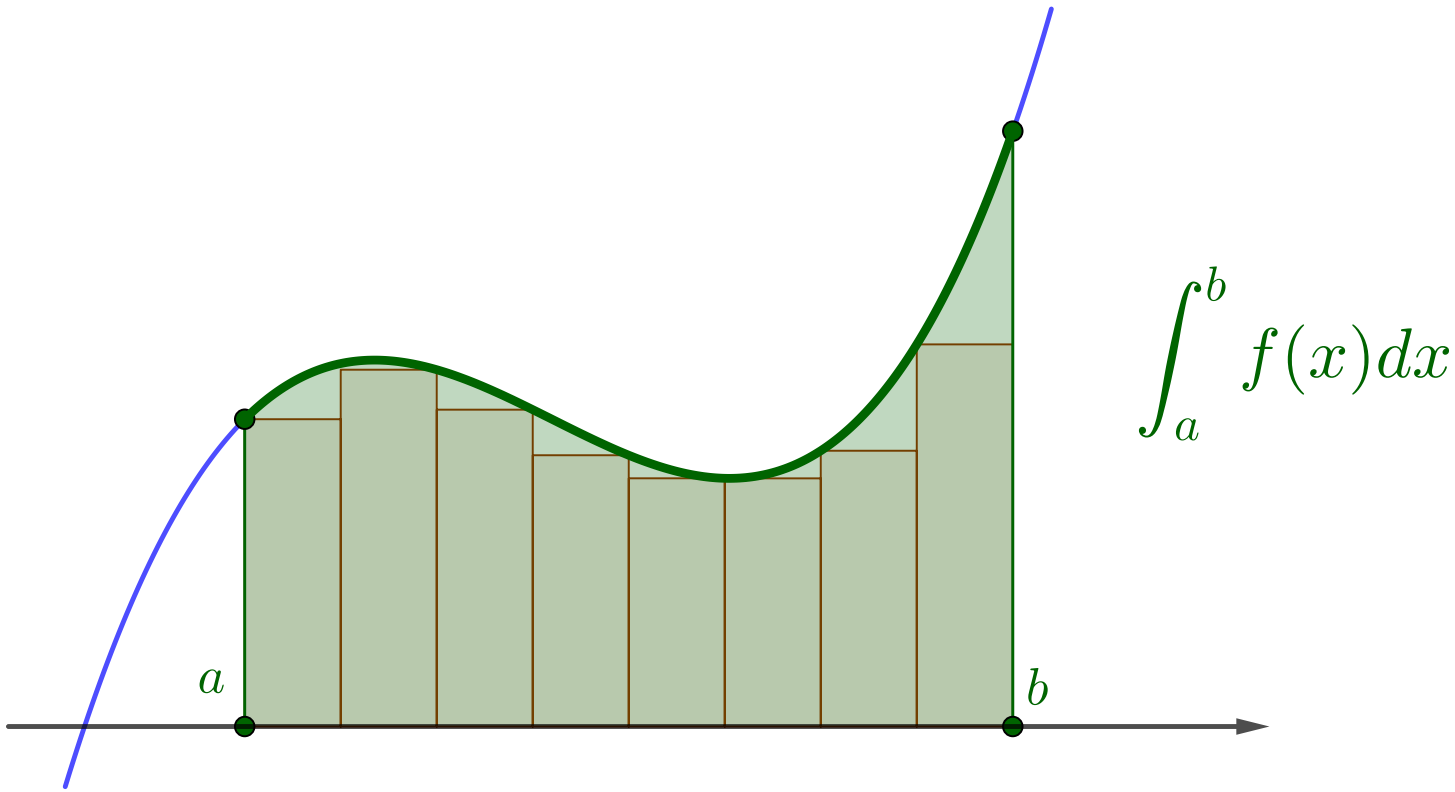



a
b

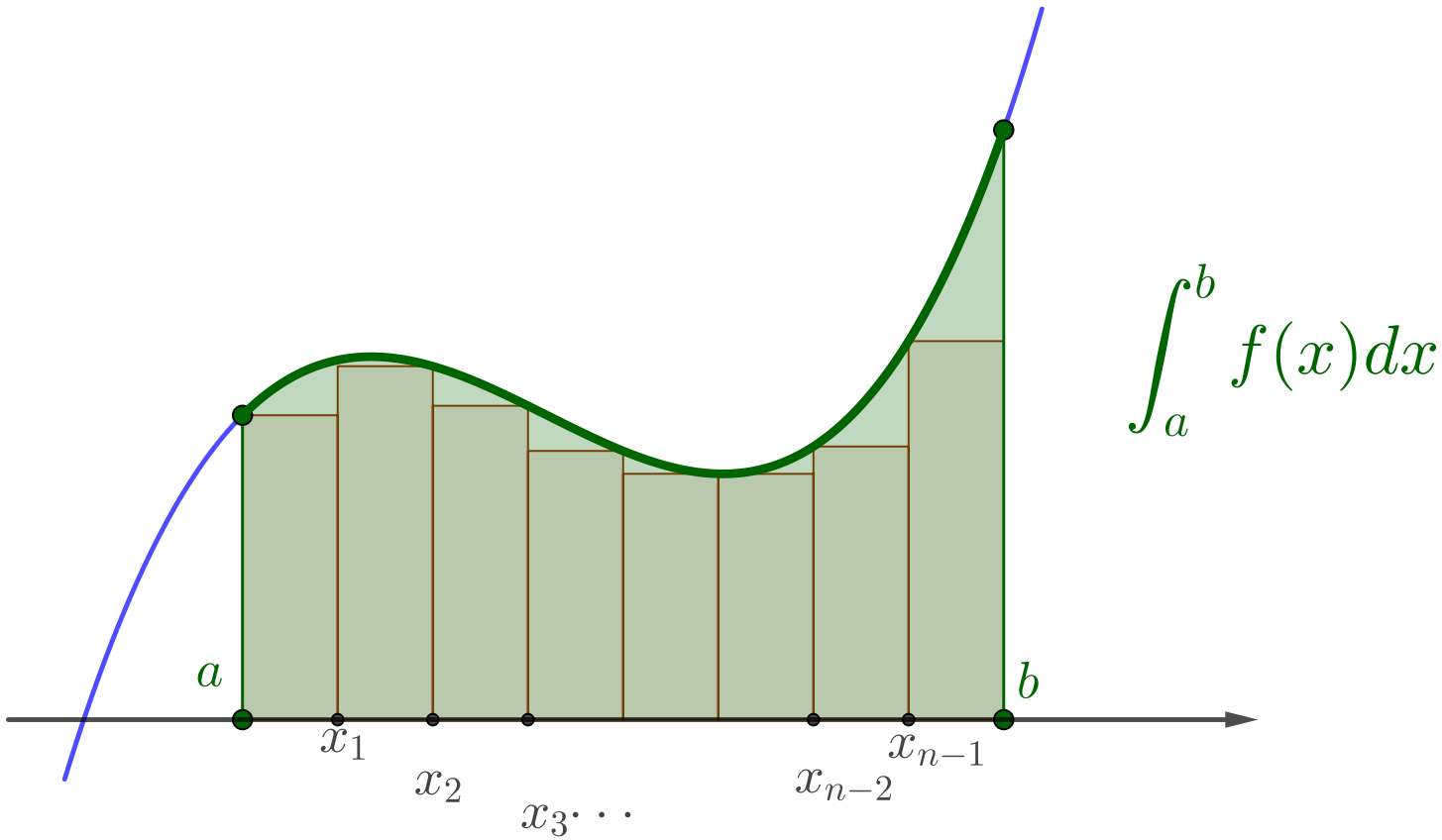


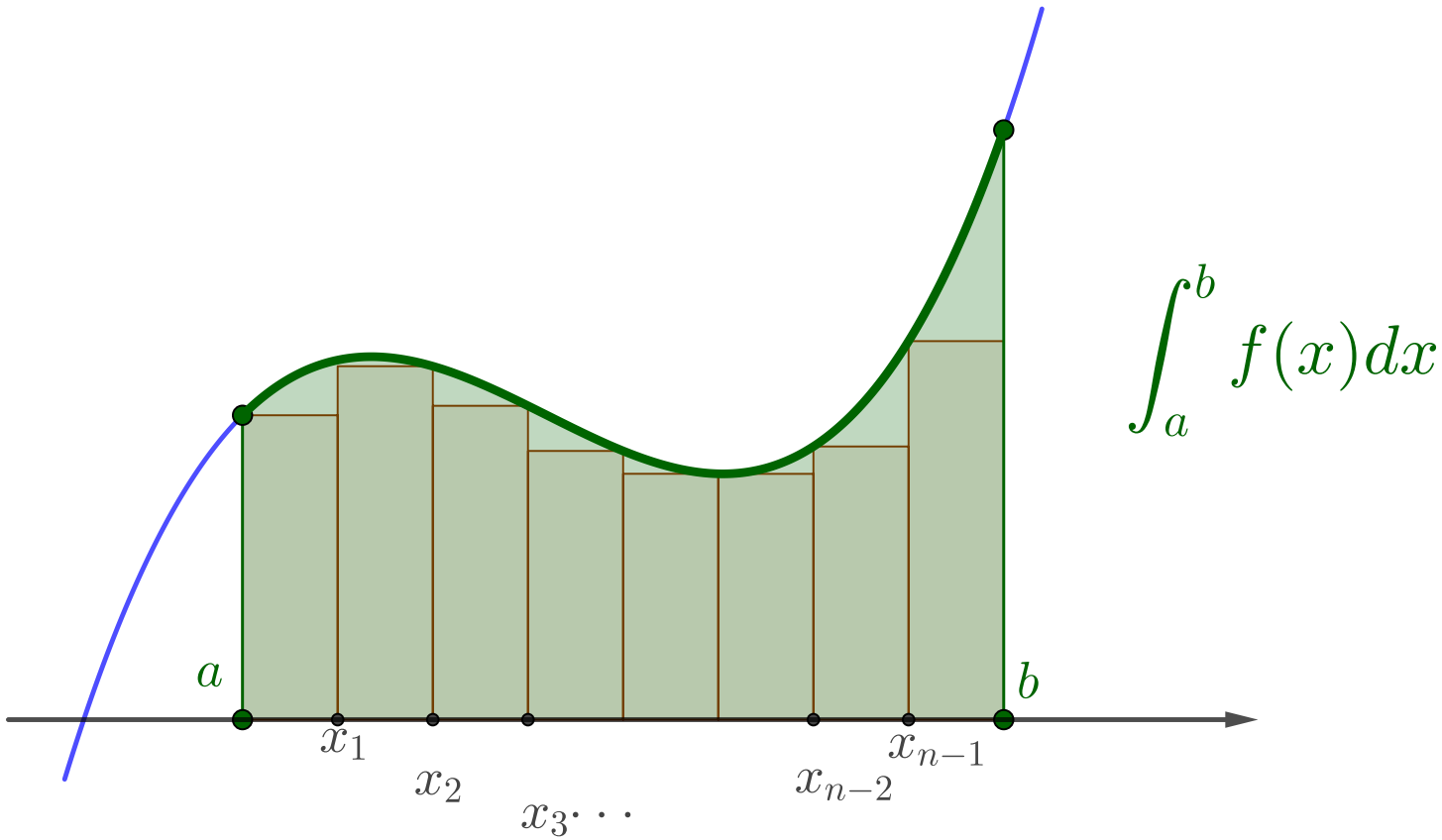
$$\int_a^b f(x)dx$$



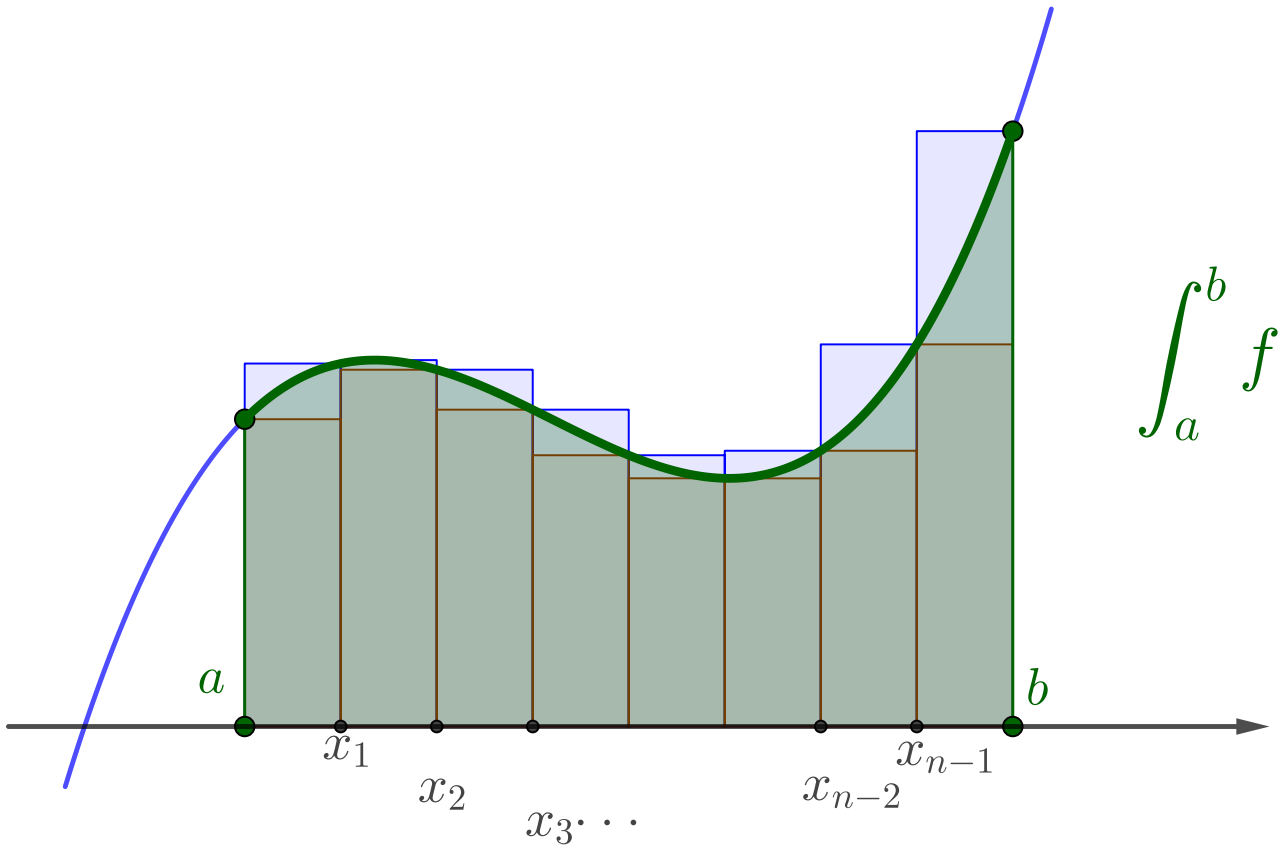
$$\int_a^b f(x)dx$$

Start End





$$\sum_{k=1}^{n}\left\{(x_k - x_{k-1}) \min_{x\in[x_{k-1},x_k]} f(x)\right\}$$



$$\int_a^b f(x)dx$$

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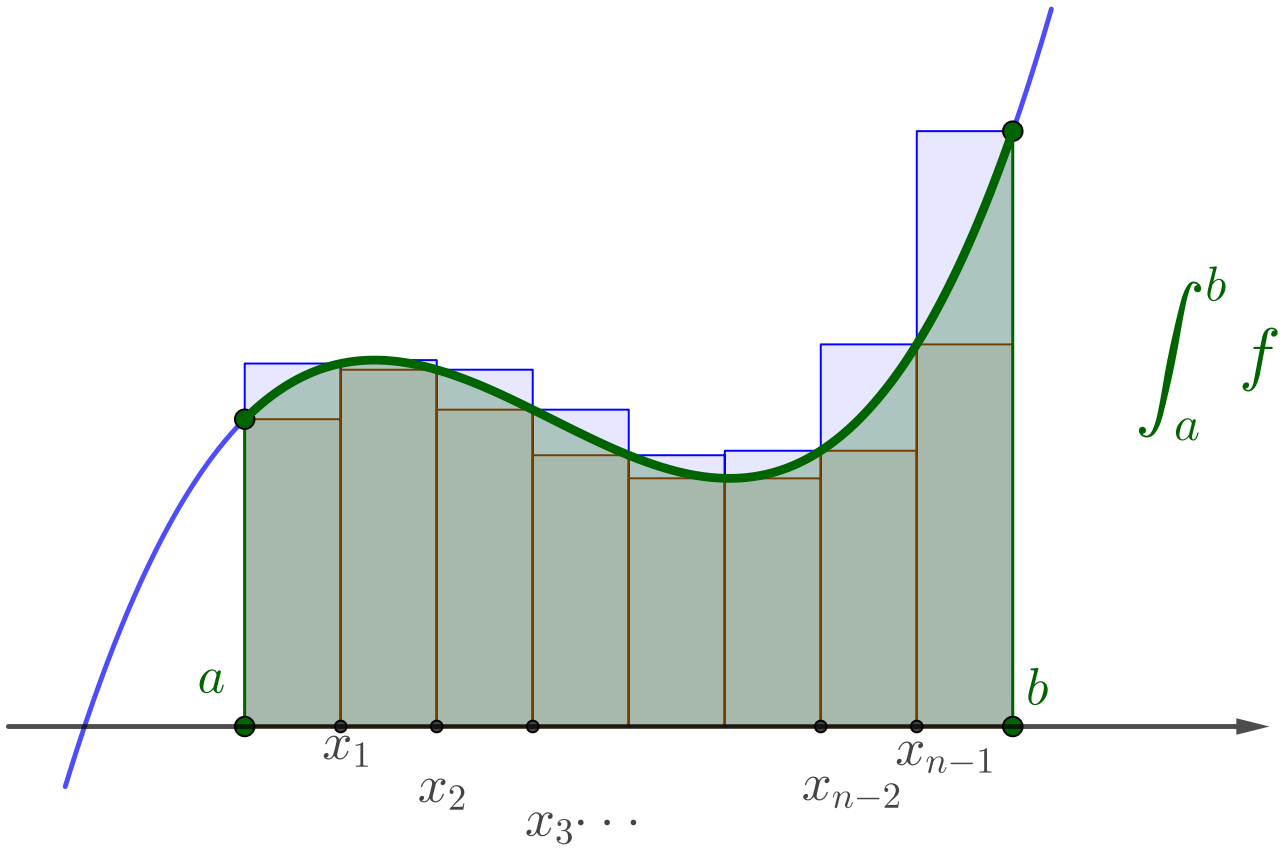
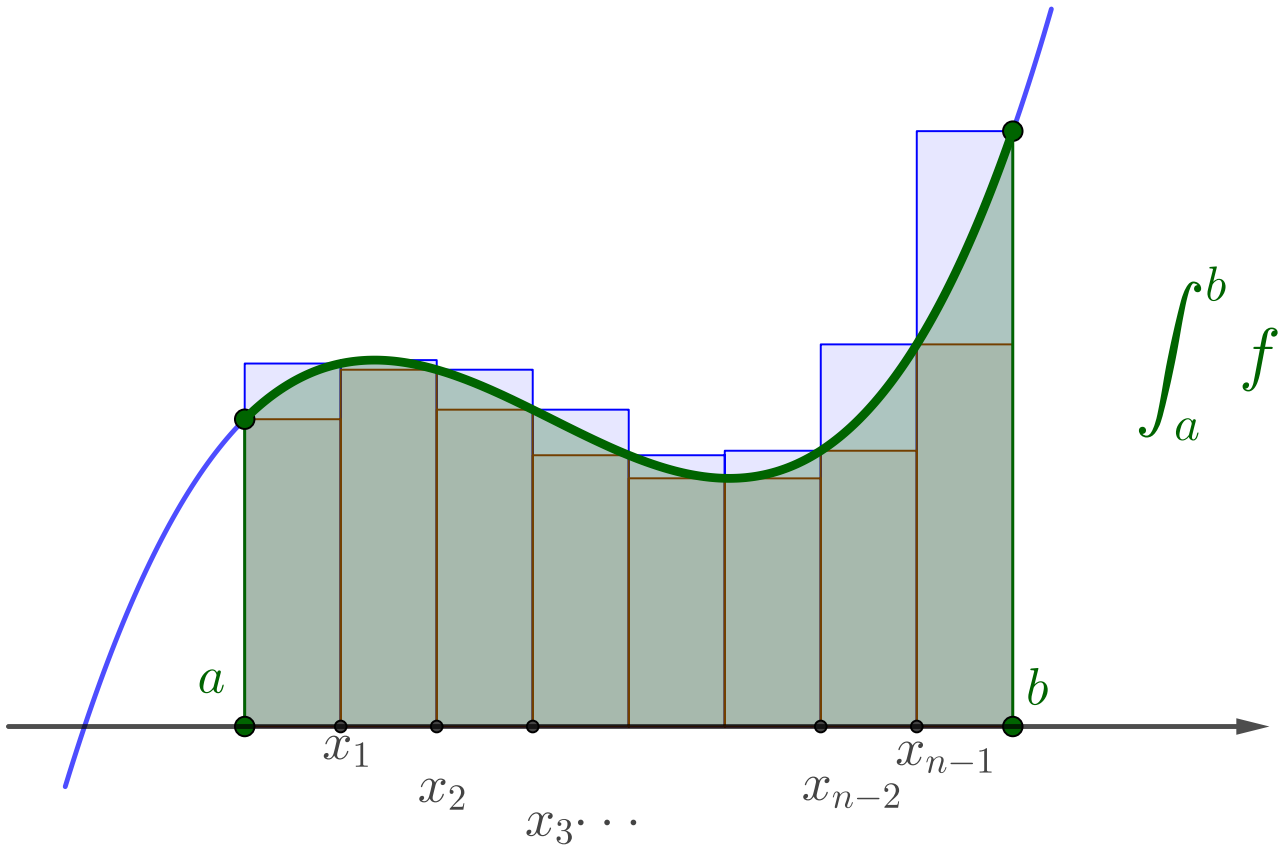
Start End



$$\int_a^b f(x)dx$$

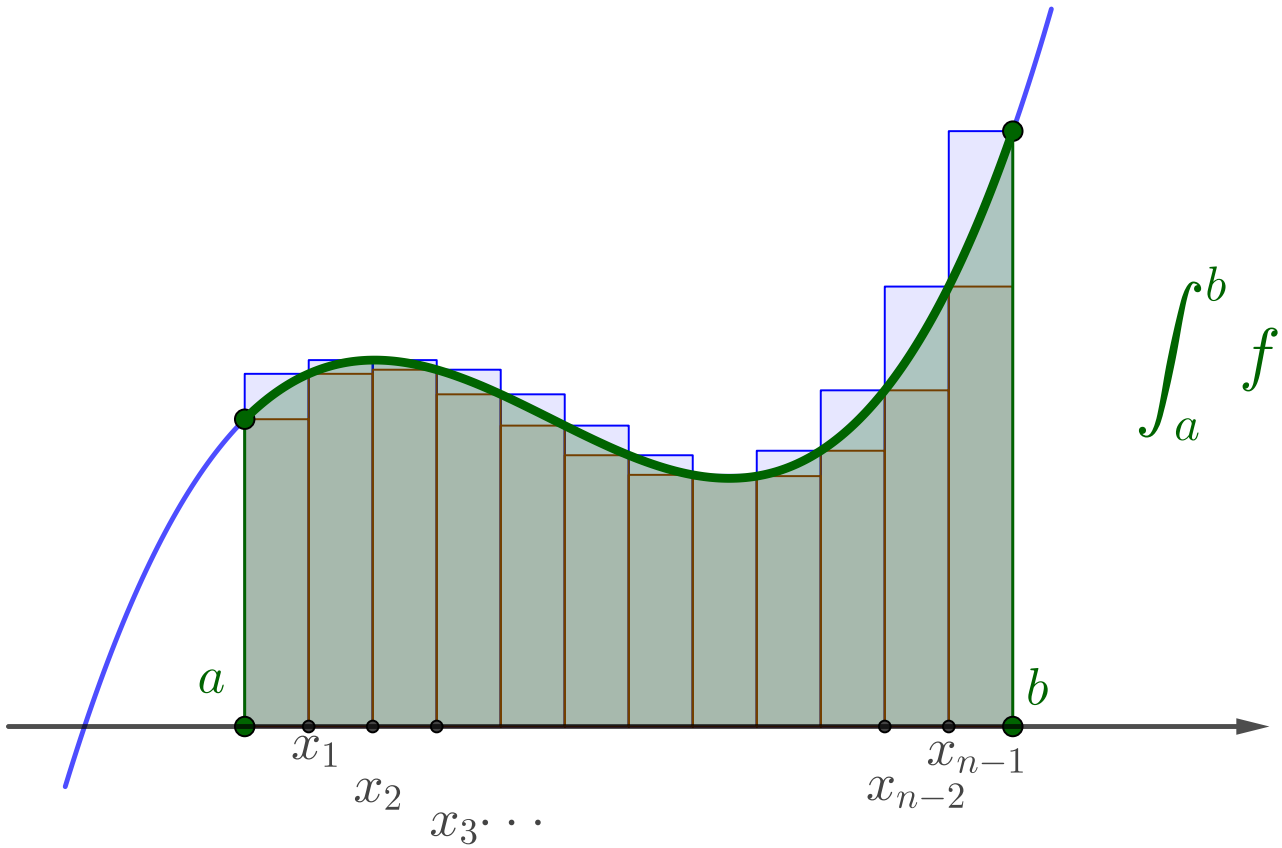
$$\sum_{k=1}^{n}\left\{(x_k - x_{k-1}) \min_{x\in[x_{k-1},x_k]} f(x)\right\}$$

$$\sum_{k=1}^{n}\left\{(x_k - x_{k-1}) \max_{x\in[x_{k-1},x_k]} f(x)\right\}$$



$$\int_a^b f(x)dx$$

$$\sum_{k=1}^{n}\left\{(x_k - x_{k-1})\min_{x\in[x_{k-1},x_k]} f(x)\right\} \leq \sum_{k=1}^{n}(x_k - x_{k-1})f(x_k) \leq \sum_{k=1}^{n}\left\{(x_k - x_{k-1})\max_{x\in[x_{k-1},x_k]} f(x)\right\}$$



$$\int_a^b f(x)dx$$

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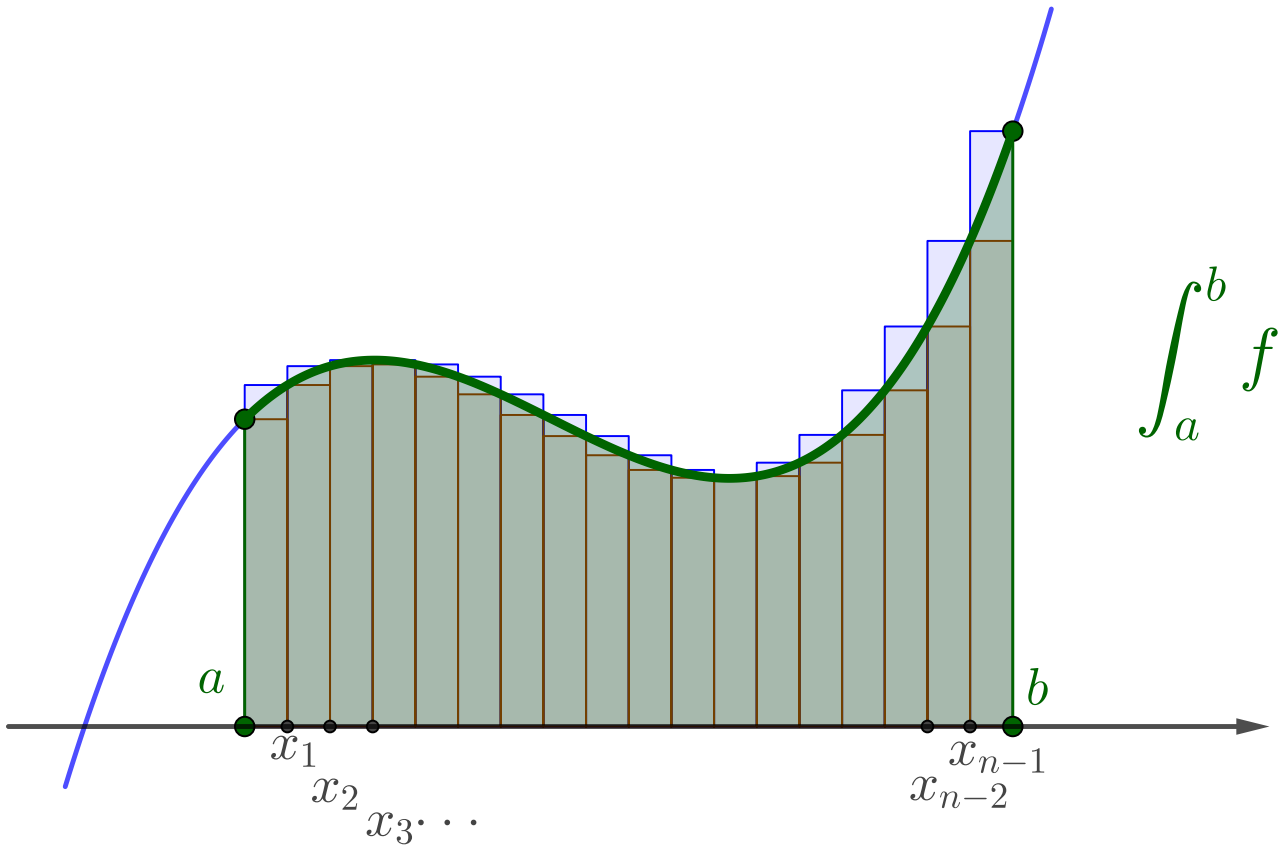

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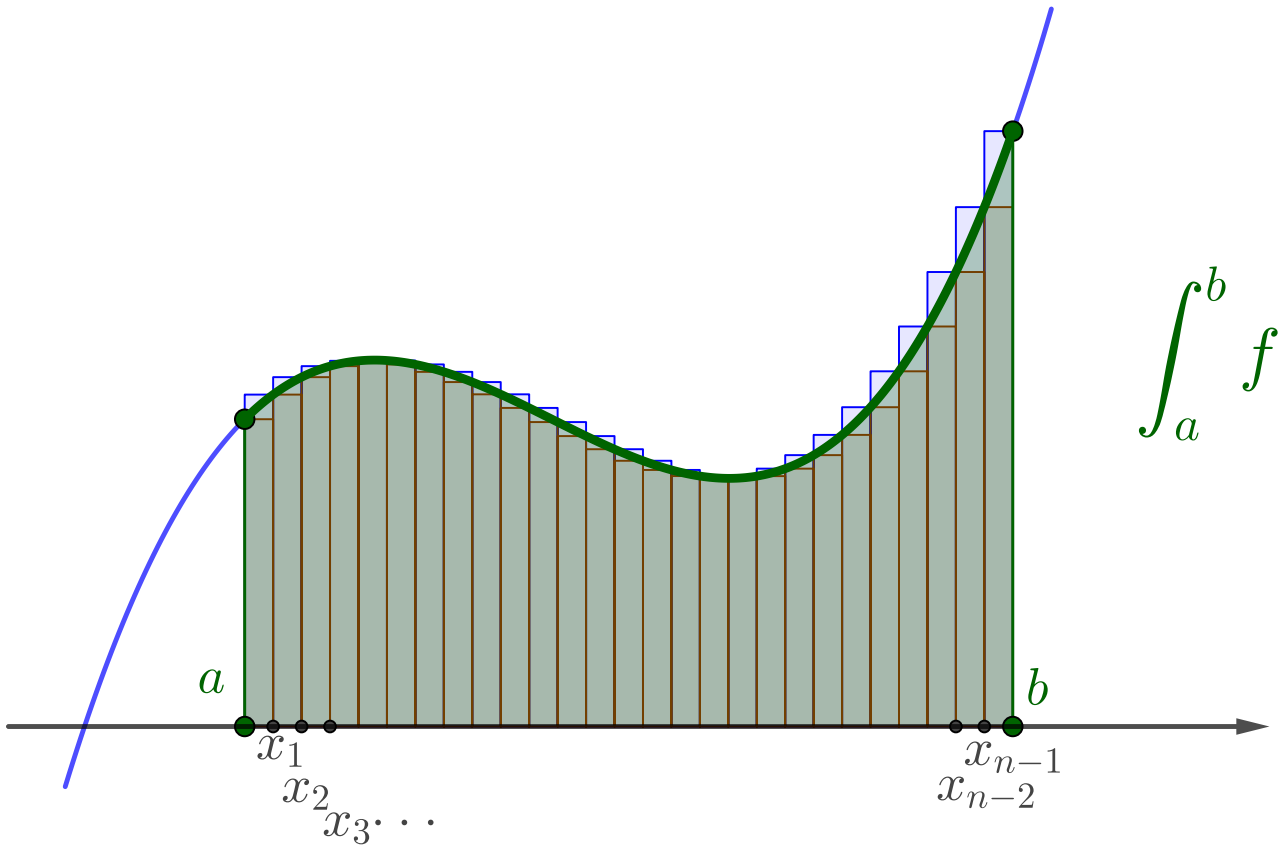

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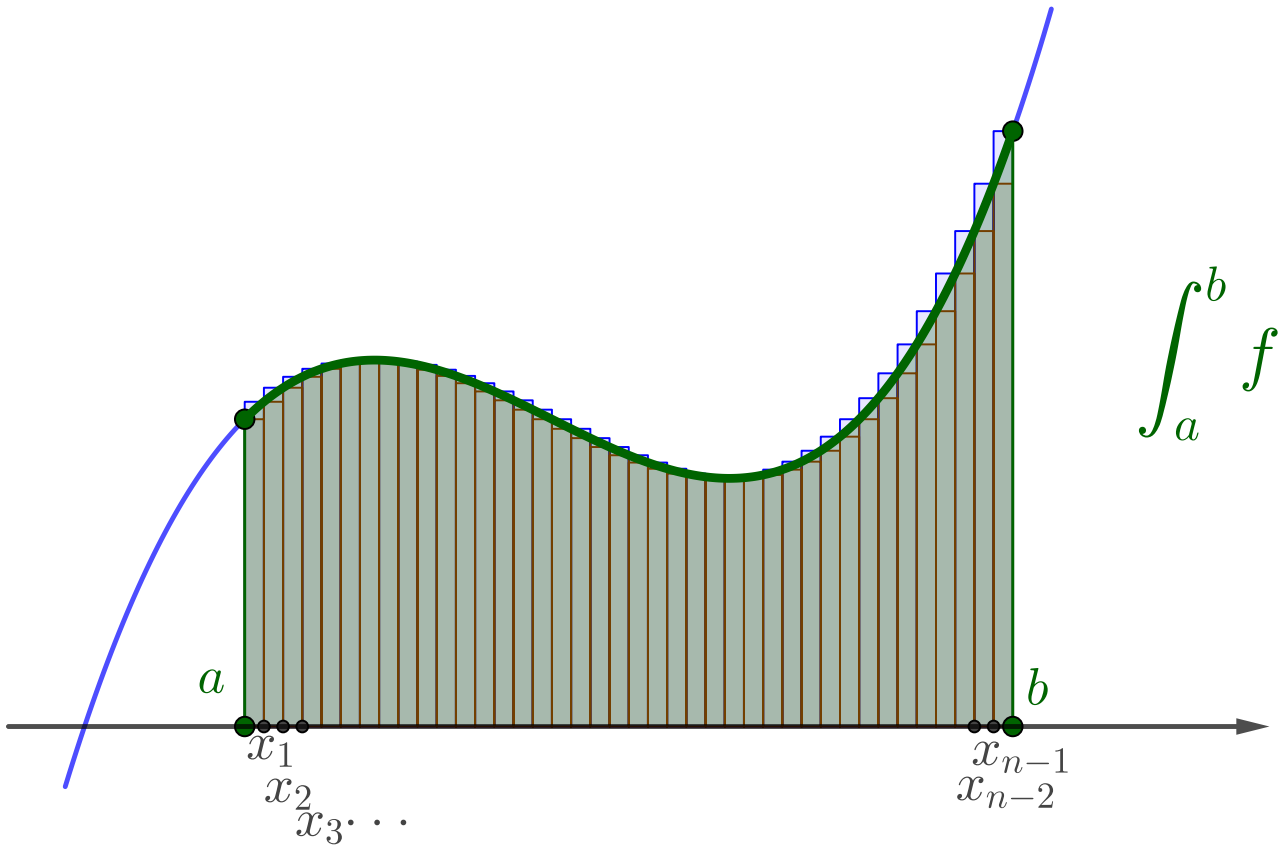
$$\sum_{k=1}^{n}\left\{(x_k - x_{k-1})\min_{x\in[x_{k-1},x_k]} f(x)\right\} \leq \sum_{k=1}^{n}(x_k - x_{k-1})f(x_k) \leq \sum_{k=1}^{n}\left\{(x_k - x_{k-1})\max_{x\in[x_{k-1},x_k]} f(x)\right\}$$



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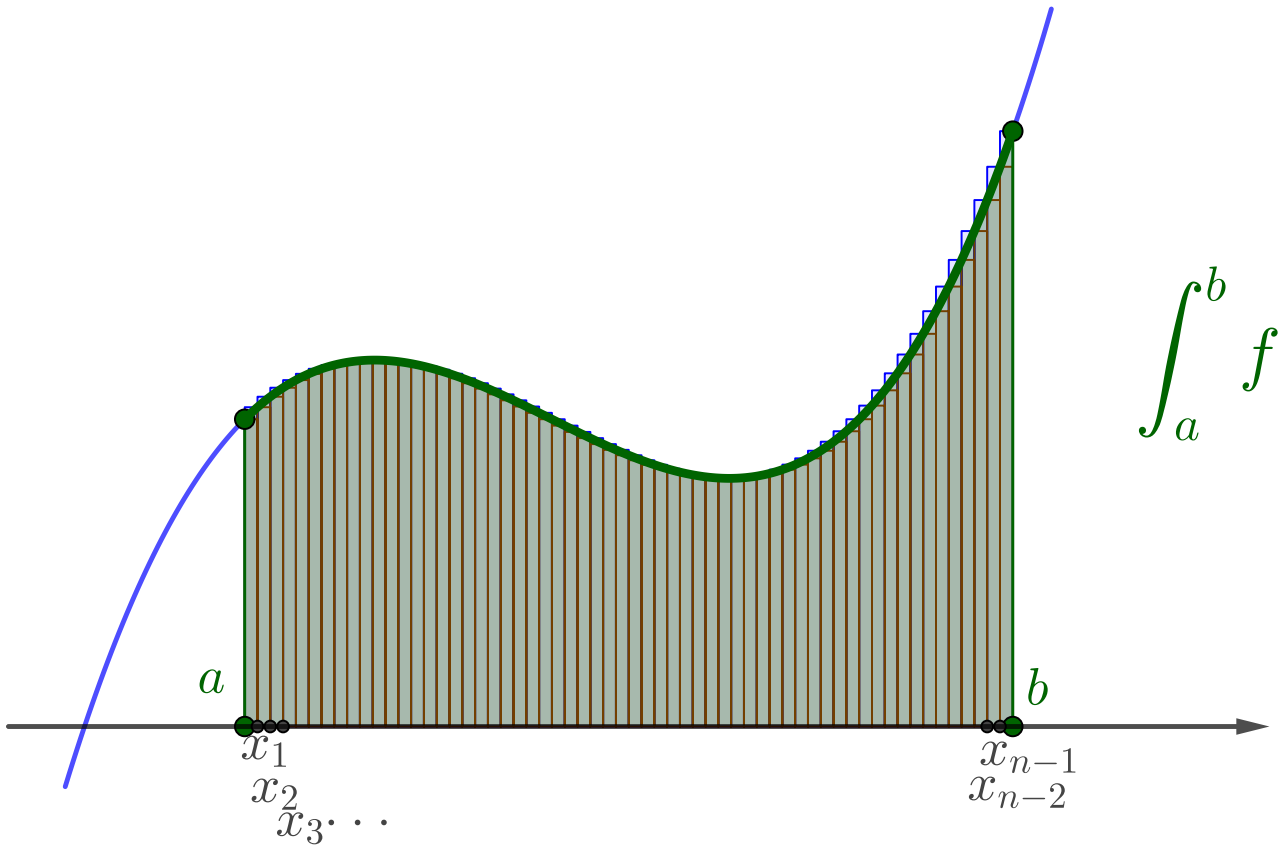

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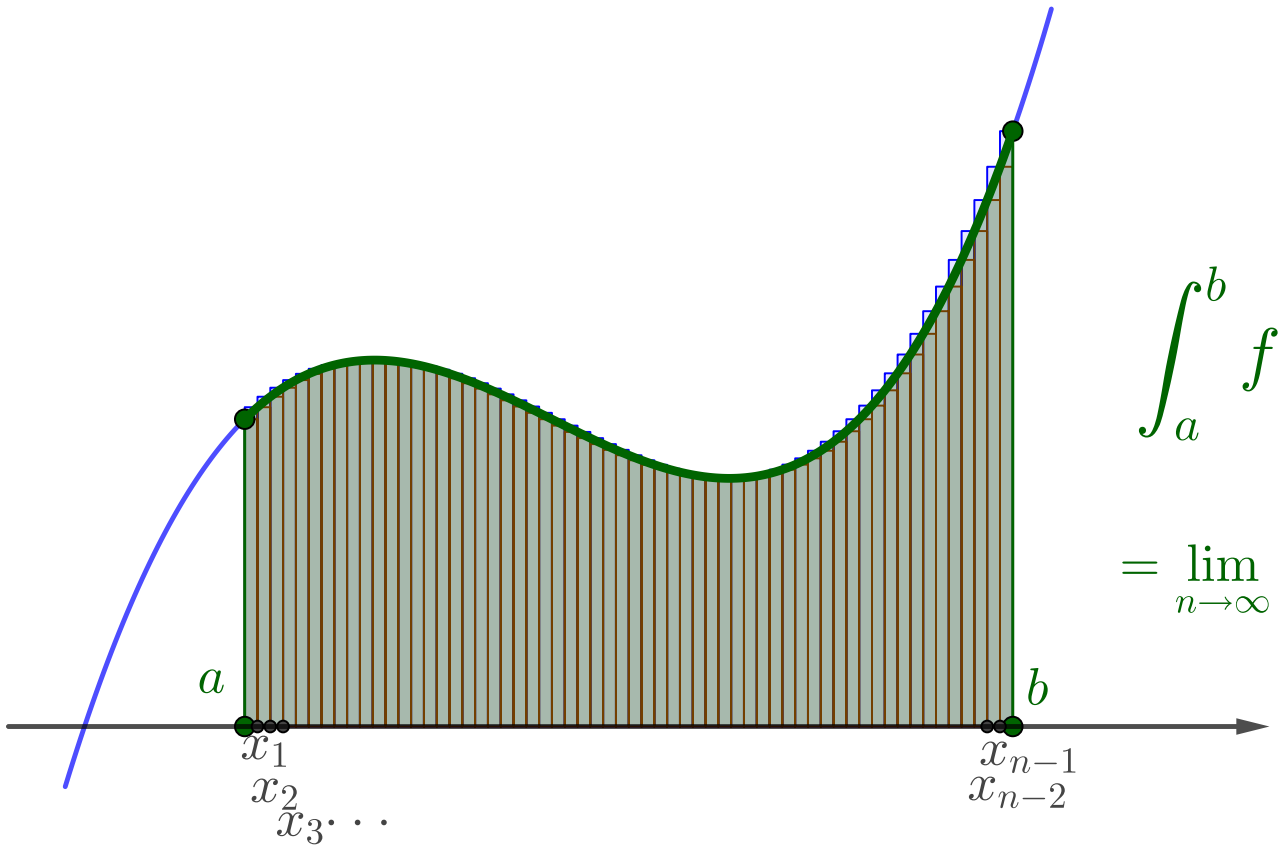

$$\int_a^b f(x)dx$$

$$= \lim_{n\to\infty} \sum_{k=1}^{n} (x_k - x_{k-1}) f(x_k)$$

$$\sum_{k=1}^{n} \left\{ (x_k - x_{k-1}) \min_{x\in[x_{k-1},x_k]} f(x) \right\} \leq \sum_{k=1}^{n} (x_k - x_{k-1}) f(x_k) \leq \sum_{k=1}^{n} \left\{ (x_k - x_{k-1}) \max_{x\in[x_{k-1},x_k]} f(x) \right\}$$

Github:
https://min7014.github.io/math20240504001.html

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