

- $M_i^f = \sup \{f(x) \mid x \in [x_{i-1}, x_i]\}$
- $m_i^f = \inf \{f(x) \mid x \in [x_{i-1}, x_i]\}$
- $U(P, f, \alpha) = \sum_{i=1}^n M_i^f \Delta\alpha_i$
- $L(P, f, \alpha) = \sum_{i=1}^n m_i^f \Delta\alpha_i$
- $\int_a^b f \, d\alpha = \sup \{L(P, f, \alpha) \mid P \text{ partición}\}$
- $\int_a^{\bar{b}} f \, d\alpha = \inf \{U(P, f, \alpha) \mid P \text{ partición}\}$