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Analysis I
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Day 8 — Summary — Riemann Integration and Taylor Series

42. Darboux criterion: The function f is Riemann integrable on $[a, b]$ if and only if for all ε there is a partition P for which $U_a^b(f, P) - L_a^b(f, P) < \varepsilon$.
43. Continuous functions are Riemann integrable (on closed bounded domains).
44. The function f is Riemann integrable on $[a, b]$ with value s if and only if for all ε there is a δ such that $U_a^b(f, P) - s < \varepsilon$ and $s - L_a^b(f, P) < \varepsilon$ whenever $\|P_n\| < \delta$.
45. The Riemann integral has several inadequacies.