1 9.3: Arclength

Goal: Given a curve, find the length of the curve between two points.

Informal Derivation of Method:

Examples: Find the length of the curve $y = x^{2/3}$ from $x = 1$ to $x = 8$.

Method I: Method II: 
Find the length of the curve \( y = \frac{1}{8}x^2 - \ln x \) from \( x = 1 \) to \( x = 3 \).

Find the length of the curve parametrized by \( x = t \cos t, \ y = t \sin t, \ t \in [0, 2\pi] \).