Supplementary Problem on Riemann Sums

Approximate $\int_1^3 \sqrt{9-x^2}\,dx$ using Riemann sums and subintervals of equal length.

1. Use 20 subintervals, and select c_i as the left endpoint of $[x_{i-1}, x_i]$.

2. Use 40 subintervals, and select c_i as the right endpoint of $[x_{i-1}, x_i]$.

3. Use 80 subintervals, and select c_i as the midpoint of $[x_{i-1}, x_i]$.

4. Draw a graph of the area represented by this integral.