Integrals as Averages

1. Determine the average value of \( f(t) = \sin(t) \) between \( t = 0 \) and \( t = 2\pi \). Do this without doing any calculations.

2. Determine the average value of \( g(x) = x^2 \) between 0 and 1. Do this two ways: using LH and RH sums, and using the Fundamental Theorem.

3. Determine the average value of \( h(x) = x^3 \) between 0 and 1. Do this two ways: using LH and RH sums, and using the Fundamental Theorem.

4. For the two functions above, \( g(x) \) and \( h(x) \), which had a larger average value, and why?