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?