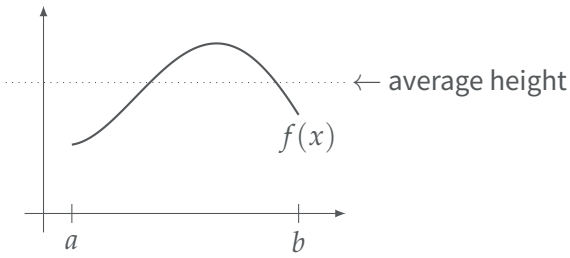
Math 142 Quiz 1

Names: _____

1. In this problem you will find a formula for the average height of the function $f(x)$ on $[a, b]$:



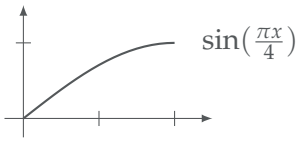
a. Chop up $[a, b]$ into n evenly spaced intervals: 

. What is $(x_{i+1} - x_i)$?

b. What is the average of the function heights $f(x_1), f(x_2), \ldots, f(x_n)$?

c. Take $\lim_{n\to\infty}$ of the answer in part b. to find an integral formula for the average of $f(x)$ on $[a, b]$.

2. Find the average value of the function $\sin(\frac{\pi x}{4})$ on $[0, 2]$:



3. Evaluate $\int_0^9 \sqrt{9-x}\, dx$

4. Evaluate $\int_0^9 \sqrt{3-\sqrt{x}}\, dx$