Math 1552, Integral Calculus
Section 5.1: Riemann Sums

1. (*Applying the Riemann Sum*) You are driving when all of a sudden, you see traffic stopped in front of you. You slam the brakes to come to a stop. While your brakes are applied, the velocity of the car is measured, and you obtain the following measurements:

Time since applying breaks (sec)	0	1	2	3	4	5
Velocity of car (in ft/sec)		88	60	40	25	10	0

Using the points given, determine upper and lower bounds for the total distance traveled before the car came to a stop. (*Answers: Upper bound is 223 ft; Lower bound is 135 ft*)

2. Consider the function $f(x) = x + 2x^2$ on the interval $[0, 2]$. Using a midpoint estimate with $n = 4$ subintervals, estimate the *average value* of f. (*Answers: Midpoint estimate is 7.25 units^2, so the average value is approximately* $3\frac{5}{8}$)