Reading Outline, §5.1

Vocabulary/Definitions

- Estimating distance traveled from data
- Representing distance traveled as a sum of rectangular areas
- Finding the difference between over- and under-estimates for distance traveled
- Relating area under velocity curves to distance traveled
- Left and right sums to find distance traveled
- Accuracy of left and right sums

Understand

1. Suppose that a car's velocity is given by $v(t) = 2\sqrt{t^2 + 1}$ ft/s. Make a table of values for the velocity of the car at $t = 0$, 0.5, 1, 1.5, 2, 2.5 and 3. Then use this data to estimate the distance the car travels in this time.

2. For your data in (1), how frequently would you need to record velocities to get an estimate for the distance traveled that is within 0.1 of the actual distance?