A team of British racers is trying to set a land speed record in the Utah desert. On one of their trial runs, they record the following data, where t is the number of seconds after the beginning of the run, and d is the number of feet that the front of their car has gone forward past its initial starting point.

t	4.00	4.01	4.10	4.50	5.00
d	1950.1	1954.12	2003.2	2276.7	3027.2

1. What was the average velocity of the car between $t = 4.00$ seconds and $t = 5.00$ seconds?

2. The average velocity between $t = 4.00$ seconds and $t = 4.50$ seconds?

3. Between $t = 4.00$ seconds and $t = 4.10$ seconds?

4. Between $t = 4.00$ and $t = 4.01$ seconds?

5. What do you think the car's speedometer read at $t = 4.00$ seconds?

6. Between $t = 4$ and $t = 5$, was the car accelerating? Deaccelerating (braking)? Maintaining a constant speed?

   After the trial run, the racers graphed their car's position against time; see the graph.

7. Draw a line whose slope is the average velocity of the car between $t = 4.00$ and $t = 5.00$ seconds. Why is the slope of this line equal to the average velocity of the car during this time?

8. Same, but between 4.00 and 4.50 seconds; 4.00 and 4.10 seconds; 4.00 and 4.01 seconds.

9. Draw a line representing the car's velocity at $t = 4.00$, and explain how you can obtain the car's velocity at $t = 4.00$ from the line you drew.

10. Between $t = 4$ and $t = 5$, was the car accelerating? Deaccelerating (braking)? Maintaining a constant speed? How can you see this from the graph?