

A 20 Minute Ride
Modified from an activity originally developed by Larry Peterson

As a passenger in a car and armed with your trusty timepiece, take a 20 minute ride with a responsible adult. At the end of each minute, record your approximate speed. Spend no more than half your time on the freeway and observe all traffic laws.

Time	0	1	2	3	4	5	6
Speed	0						
Time	7	8	9	10	11	12	13
Speed							
Time	14	15	16	17	18	19	20
Speed							

1. Use a Riemann Sum using left evaluation points to approximate the total distance traveled during the first 10 minutes.
2. Use a Riemann Sum using right evaluation points to approximate the total distance traveled during the first 10 minutes.
3. Use a Riemann Sum using midpoint evaluation points to approximate the total distance traveled during the first 10 minutes.
4. Make a connected scatter plot of your results on a graphing calculator. Sketch the plot below. Let t (time) be the horizontal axis and s (speed) the vertical axis. Let each horizontal unit represent 1 minute and each vertical unit represent 5 miles per hour.

Find a section of the curve that can be approximated by a function, and use your calculator to find the regression equation.

Use the regression equation and a definite integral to approximate the total distance traveled during the chosen time interval.