

Written Problem 2

My car, a '92 VW Cabriolet convertible, is called Little Red. Now, I think she's pretty awesome, but some other people are not so convinced. One guy in particular says she can't go fast enough. "It must take days to get that car up to freeway speed." Well, I've never been able to test this theory, since I haven't found a place where I can go from a complete stop and accelerate to freeway speeds. I do know, however, if I push the gas pedal all the way down leaving a stop light, I can reach 25 mph in 4 seconds. If I assume Little Red accelerates at a constant rate, how fast can she go from 0 to 60 mph? Although 0 to 60 is an interesting statistic to report, it doesn't directly apply to any of the driving I do. Suppose by the time I reach the end of the on-ramp, I have reached 35 mph. How much longer does it take for me to reach the speed of traffic, say 70 mph? How far onto the freeway am I by that time?

(Make sure you include all the units in your calculations and write up your solutions clearly and neatly. Use complete sentences and correct grammar to explain your process and reasoning.)