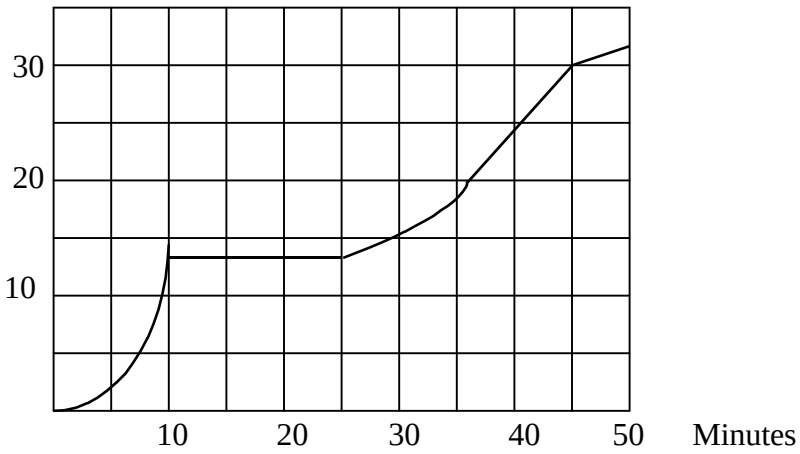
A Morning's Commute

Joshua, Aliena, Todd and Betty have formed a carpool to classes at USCS from Greenville. On a recent trip the girls decided to track the distance by mile markers on the interstate while Joshua was driving. The graph below charts the distance traveled as a function of time on I-85 from Exit 40 where they entered I-85 to Exit 72 near USCS.



I. Using the graph, write a report (word processed) in which you answer the following questions:
   1. How far is the daily commute for these students?
   2. How long did the trip take this day?
   3. Discuss the speeds that Joshua drove during this day's commute, i.e. how fast did he go during the first ten minutes, the next fifteen minutes, etc. Use properties of the graph to support your conclusions.
   4. What possible explanations might be offered for the variations in speed noted in your response to question 3?

II. Describe your daily trip home from school. (If you live on or very near campus, pick a trip that is very familiar to you.) Estimate the number of miles, types of roads (interstate, country, city), stoplights and other stops, average speed between stops. Word process your description.

III. On a piece of graph paper or on a carefully drawn grid, draw a graph similar to the one above describing the distance traveled as a function of time in your description in part II. Be sure your graph matches your description. (Remember that Distance = Rate times Time. If, for example, your graph contains vertical or very steep segments, it's probably wrong. Why?)

Original by Celia Adair. Modified by M.B. Ulmer 1/99.