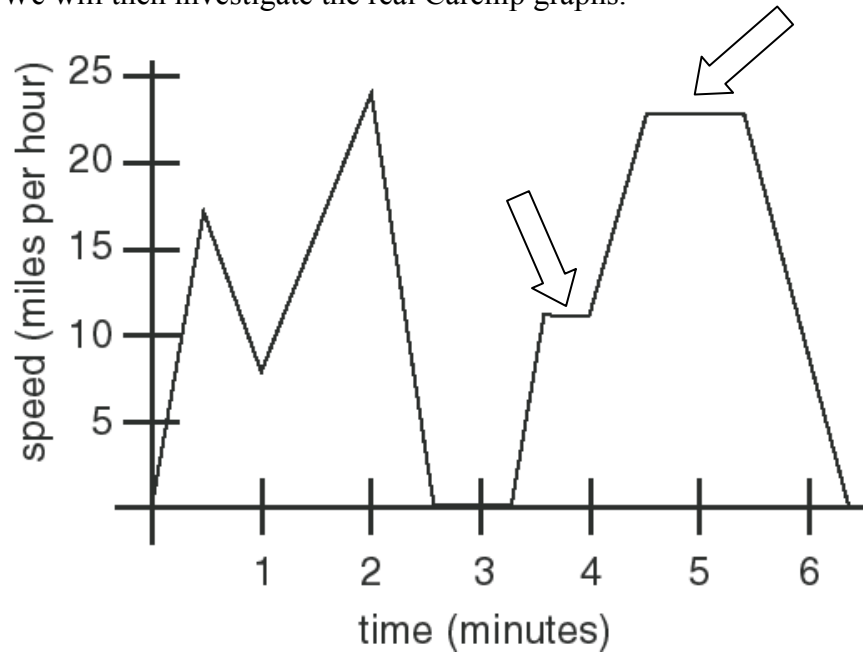


The following graph is a simplified version of the graph generated by the Carchip module. It shows the relationship between the speed of a car and time. Answer the questions. We will then investigate the real Carchip graphs.



1. Describe what the driver might be doing during the first two minutes. Make sure you explain all three segments that make up this part of the graph. Does the driver come to a complete stop during this time?

2. When does the car make its first complete stop? How long is the car stopped? Give a reasonable excuse for this.

3. Locate the two arrows near the four and five minute marks. What is happening here? In other words, why does the graph level out?

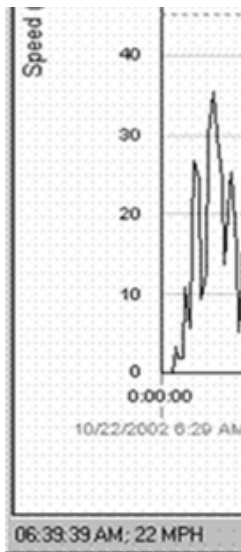
4. How long does this car trip last?

5. Approximately, what is the fastest the car traveled during the trip?

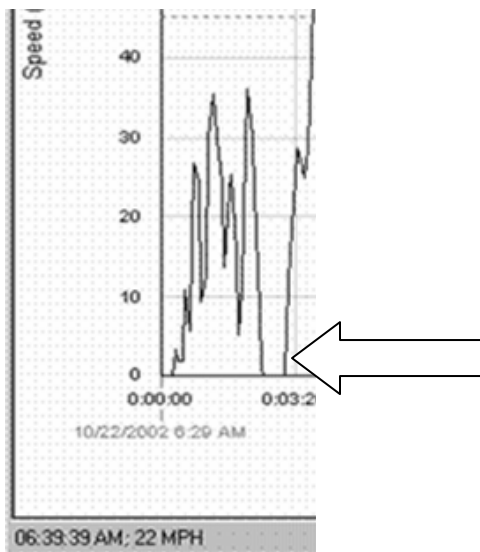
6. How many times did the driver slow down or brake? How does the graph show this information?

The following full-page graphs were obtained through a Carchip, designed to give mechanics diagnostic information. <http://www.davisnet.com/drive/products/carchip.asp> The first full-page graph shows the speed of the vehicle for the first thirty minutes of driving. The second full-page graph shows the temperature of the car's coolant for these same thirty minutes. Each vertical line represents 3 minutes and 20 seconds. Answer the following questions.

7. Consider the graph of the car's speed for the first 3 minutes or so, shown below. Describe, in general, what the driver is doing during this time. In other words, why does the graph look so jagged?



8. Around the 3 minute mark the (speed) graph drops off completely and then resumes at a rather steep angle several seconds later. What is the driver doing here? (A picture of the appropriate portion of the graph is below. The arrow points to the area in question.)



9. What is the maximum speed the car achieves (for the entire trip)?

10. Approximately how long is the car going faster than 60 mph?

11. Find the part of the graph where the car first nearly hits 60 mph (right after the 3 minute and 20 second mark). Notice it quickly dips below 40 mph directly after this point. Give a good reason the car might do this.

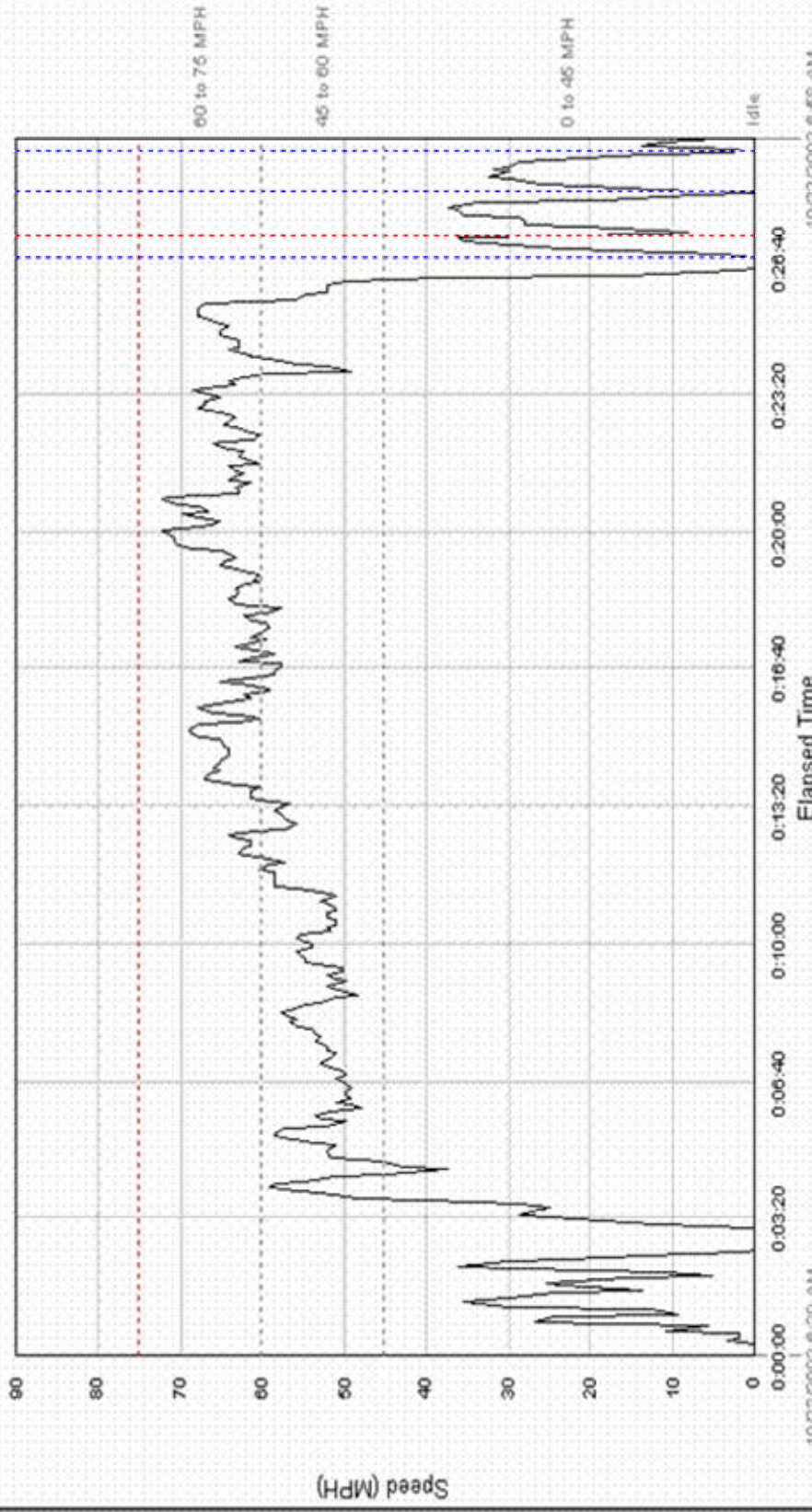
12. Consider the graph of the coolant temperature. Describe what is happening in this graph. Refer to the time at critical regions. (There are essentially two parts, the sloping part and the nearly horizontal part.)

13a. Approximately, what is the maximum temperature the coolant reaches?

13b. How long does it take for the car to reach this temperature?

13c. Approximately, how fast is the car going when it first achieves the maximum temperature?

### View / Trip Log / Trip 1 / Plot / Speed (MPH)



10/22/2002 6:29 AM 10/22/2002 6:55 AM

### View / Trip Log / Trip 1 / Plot / Coolant Temperature (°F)

