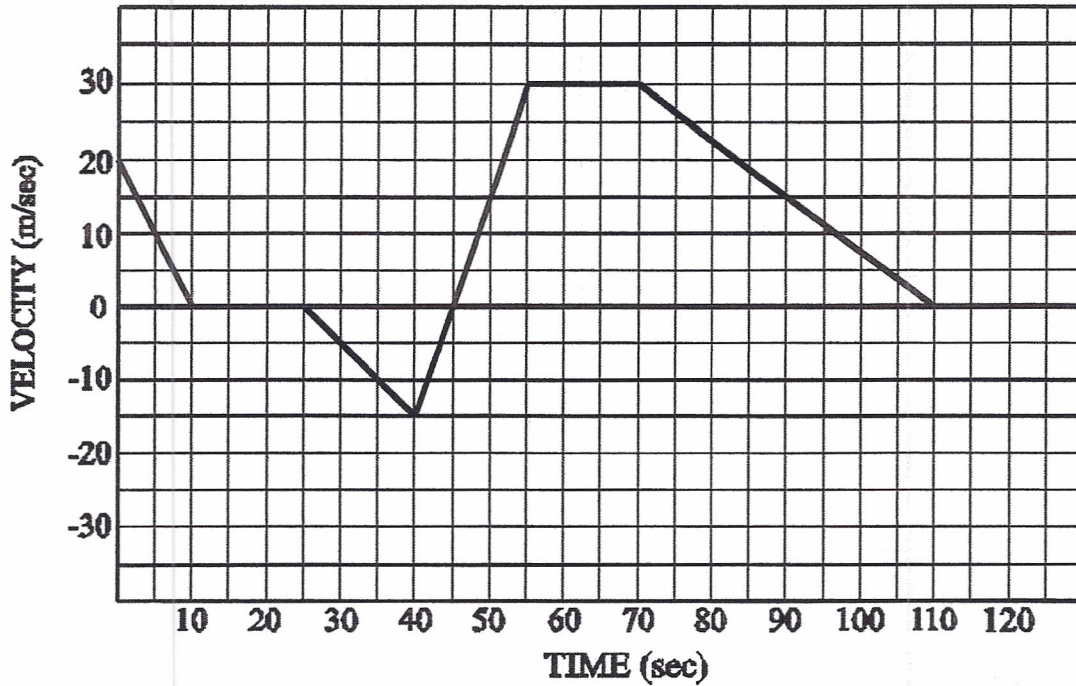# PHYSICS HOMEWORK #5   KINEMATICS
GRAPHICAL ANALYSIS

The following graph describes the velocity of an automobile as a function of time.

1. What was the velocity of this car when t = 35 seconds?
2. What was the rate of acceleration of this car when t = 20 seconds?
3. What was the rate of acceleration of this car when t = 5 seconds?
4. What was the rate of acceleration of this car when t = 40 seconds?
5. What was the displacement of this car between t = 0 and t = 10 seconds?
6. What was the displacement of this car between t = 10 and t = 25 seconds?
7. What was the displacement of this car between t = 25 and t = 35 seconds?
8. What was the total displacement of this car between t = 0 and t = 110 seconds?
9. What was the total distance traveled by this car between t = 0 and t = 110 seconds?
10. During which time interval/intervals was the car at rest?
11. During which interval/intervals was the car moving in reverse?
12. On the graph at the right sketch the acceleration of this car as a function of time.
13. At what times t [other than at t= 0] was the displacement of the car again exactly zero?
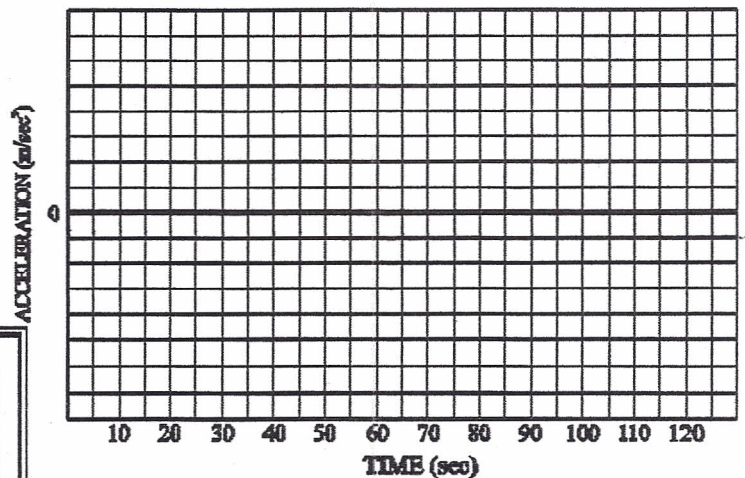
Answers to opposite side:
1. 2.0 m/sec²   2. 1.0 m/sec²
3. 0.0 m/sec²   4. -3.0 m/sec²
5. 20 m/sec   6. 60 m/sec
7. 80 m/sec   8. -2.5 m/sec
10. 900 m   9. Graph at right