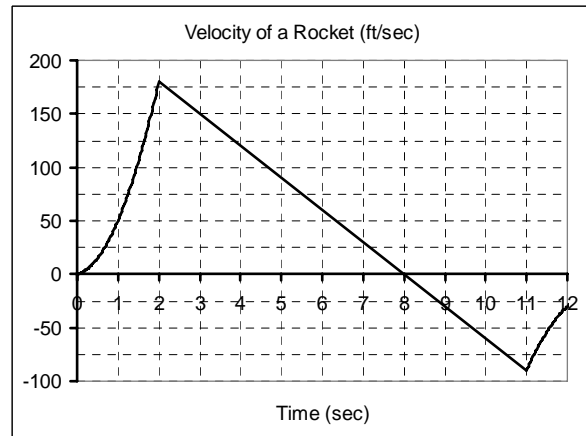


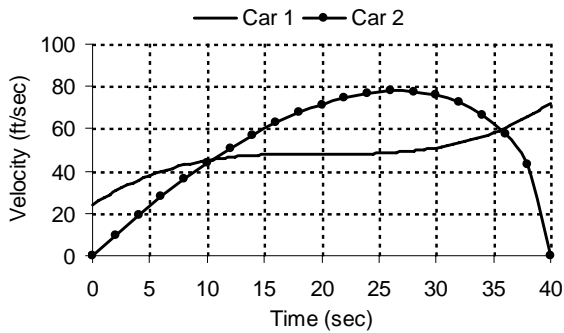
When a model rocket is launched, the fuel burns for a few seconds, accelerating the rocket upward. After burnout, the rocket coasts upward for awhile and then begins to fall. A parachute pops out shortly after the rocket starts down in order to slow the rocket. Use the graph at the right to answer the questions below. Be sure to include units in your answers.



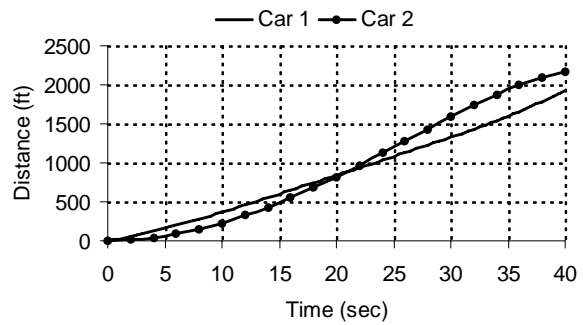
- A. How fast was the rocket traveling 4 seconds after it was launched?
- B. Was the rocket going up or down 6 seconds after it was launched? How do you know?
- C. When did the rocket reach its highest point? How high did it go?
- D. When did the parachute pop out? How do you know?
- E. Estimate $\int_6^{10} v(t) dt$ and give a practical interpretation.
- F. Estimate $\int_6^{10} |v(t)| dt$ and give a practical interpretation.
- G. Find the average velocity over the first 8 seconds.
- H. Find $v'(6)$ and give a practical interpretation.
- I. Find the average acceleration over the first 8 seconds.

Two cars are traveling on a straight road. At time zero, measurements of velocity and distance from a common reference point are made.

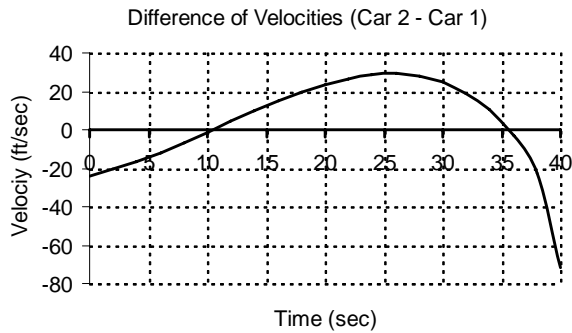
A.



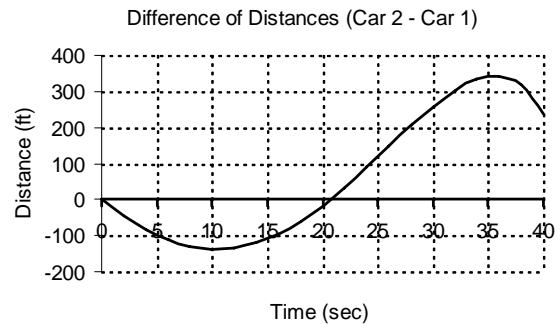
B.



C.



D.



1. What graphical feature appears at $t \approx 20$ on:

Graph A

Graph B

Graph D

2. What graphical feature appears at $t \approx 26$ on:

Graph A

Graph C

Graph D

3. What graphical feature appears at $t \approx 36$ on:

Graph A

Graph C

Graph D

4. What graphical feature appears at $t \approx 10$ on:

Graph A

Graph B

Graph C

Graph D

