A car drives half a kilometer at an average speed of 25 m/s and then immediately backs up 250 m at an average speed of 5 m/s. What are the average speed and average velocity of the car?

**10.7 m/s, 3.57 m/s**

Two cars are in a drag race. One car completes the race 0.8 s ahead of the other. The faster car drove with an average speed of 30 m/s while the other drove with an average speed of 28 m/s. How long (in m) was the race?

**336 m**

A car pulls away with constant acceleration for 10 seconds. It covers 100 m during the last 3 s of motion. How far did it travel during the first 7 s?

**96.1 m**

One car is driving with a constant velocity of 35 m/s. A second car starts from rest and travels in the same direction as the first car is going by. What must be the acceleration of the second car if it is to overtake the first in less than a kilometer?

**2.45 m/s^2**