Rectilinear Motion: Exercise 2

1. What is the meaning of a horizontal line on a plot of $v$ vs. $t$?
   (a) The object is at rest.
   (b) The object is moving at constant speed.
   (c) The object is speeding up at a constant rate.
   (d) The object is accelerating at a constant non-zero rate.
   (e) None of the above.

Problems 2 and 3 refer to the figure below:

2. During the first 8 s
   (a) object C has decreasing velocity and object D has increasing velocity.
   (b) objects C and D both have decreasing velocities.
   (c) objects C and D have the same velocity.
   (d) object C has the same average velocity as object D.
   (e) none of the above.

3. Based on all the graphical information
   (a) they meet at the same position at $t = 8$ s.
   (b) they will meet at the same position, at $t = 10$ s.
   (c) they will never meet at the same position.
   (d) not enough information is given to decide if they meet.
   (e) none of the above.

4. At the end of the time interval $\Delta t$, a car is displaced from its initial position $\Delta s$. What has been its average velocity?
5. The following plot shows the position versus clock time for a particle in motion along a straight line. On the velocity versus clock time coordinates directly below the position versus clock time plot, graph the corresponding velocity as a function of clock time.