

RAA 1

LBCC PH201 FA2016 Tadday

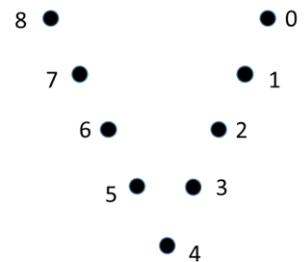
Name: \_\_\_\_\_

October 10, 2016

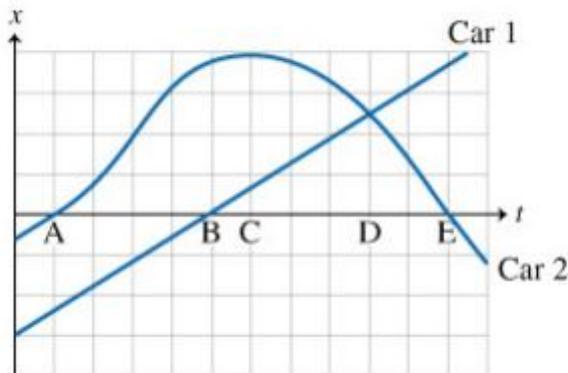
Class time: \_\_\_\_\_

Instructions: You need to show your work to receive credit.

1. (4pts) Can you tell what is going on here? Write a possible scenario (story). Be specific. Do not use the word 'object'.



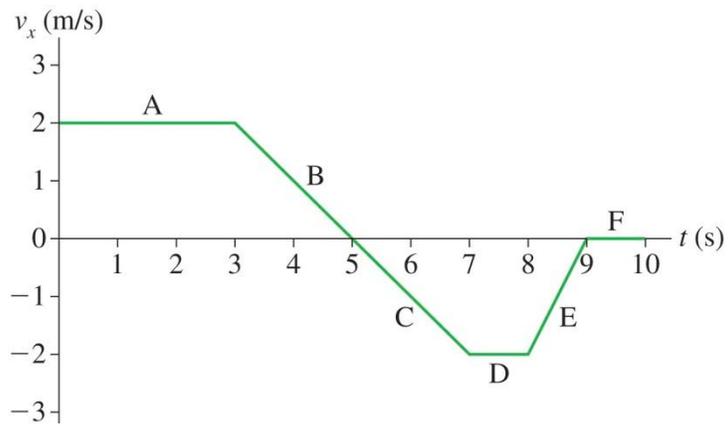
2. (4pts) Two cars travel on the parallel lanes of a two lane road. The cars' motions are represented by the position versus time graph show in the figure Answer the questions using the times from the graph indicated by letters.



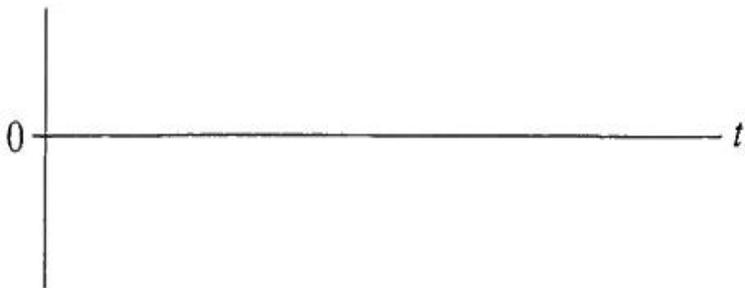
- I. Where do the cars pass each other?
- II. At what time do they have the same velocity?
- III. At what time to they have the same speed?
- IV. At what time does one of the cars (which) for a short time not move?

3. (4pts) Given is a velocity versus time graph. Draw acceleration versus time graph and a position versus time graph for that motion. The initial position is at  $x=0$ . Make sure you draw a correct scale on the axis.

$a_x$  (m/s/s)



$x$  (m)



4. While you driving to class on highway 99, you see somebody texting on the steering wheel in another car. You know that texting keeps the eyes from the road. The person is going 55 miles an hour, and you estimate that he is texting for 2.5 seconds.

To receive credit do the following steps.

- I. (2pts) Draw a picture of the problem containing all known and unknown information.
- II. (2pts) How many meters did the person drive without watching the road?  
(1mile = 1.609km).
- III. (2pts) Is it reasonable that people think texting and driving is dangerous?

5. Nicole throws a ball straight up. Chad watches the ball from a window 5 m above the point where Nicole released it. The ball passes Chad on the way up, and it has a speed of 20 m/s as it passes him on the way back down.

How fast did Nicole throw the ball?

To receive credit do the following steps.

- I. (2pts) Draw a picture of the problem containing all the given information
- II. (2pts) Draw a motion diagram of the ball.
- III. (6pts) Draw the a-t, v-t and y-t graphs for the ball including labeled axes and correct scales.
- IV. (2pts) From the graphs develop the equations to solve this problem.
- V. (XC2pts) Calculate the initial velocity of the ball leaving Nicoles hand.