

Name _____

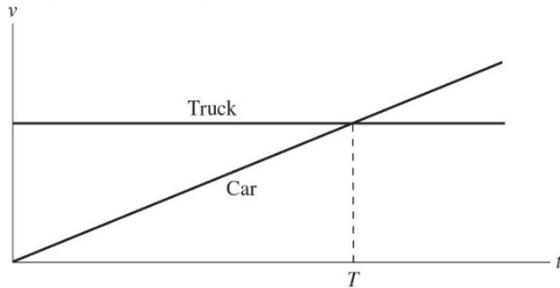
Physics June Summer Assignment

Please e-mail this assignment to muerling@youngstowndiocese.org no later than June 30. If your work is submitted early enough, you will receive comments and a chance to fix any mistakes. Look on the class website (<https://sites.google.com/a/youngstowndiocese.org/mr-uerling-classes/home/physics>) for notes and a video tutorial. If you are using a Mac, you may need to download a different media player to play the tutorial; vlc media player can be downloaded for free and works pretty well.

1) Which of the following quantities has units of a velocity? (There could be more than one correct choice.) Explain your answer.

- A) 40 km southwest
- B) -120 m/s
- C) 9.8 m/s^2 downward
- D) 186,000 mi
- E) 9.8 m/s downward

2) The motions of a car and a truck along a straight road are represented by the velocity-time graphs in the figure. The two vehicles are initially alongside each other at time $t = 0$.



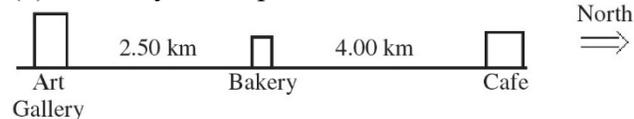
At time T , what is true of the *distances* traveled by the vehicles since time $t = 0$?

- A) They will have traveled the same distance.
- B) The truck will not have moved.
- C) The car will have travelled further than the truck.
- D) The truck will have travelled further than the car.

3) If, in the figure, you start from the Bakery, travel to the Cafe, and then to the Art Gallery

(a) what distance you have traveled?

(b) what is your displacement?



4) A runner ran the marathon (approximately 42.0 km) in 2 hours and 57 min. What was the average speed of the runner in m/s?

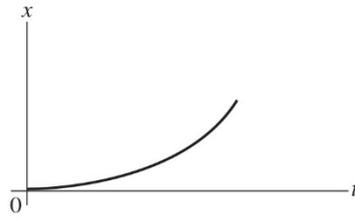
- A) 14,200 m/s
- B) 124 m/s
- C) 3.95 m/s
- D) 14.2 m/s

5) Which of the following graphs represent an object at rest? (There could be more than one correct choice.)

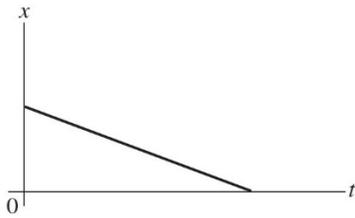
(a)



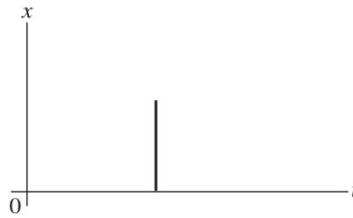
(b)



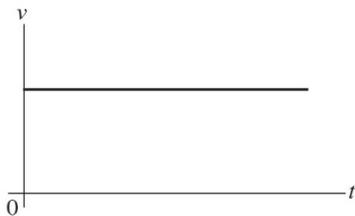
(c)



(d)



(e)



- A) graph a
- B) graph b
- C) graph c
- D) graph d
- E) graph e

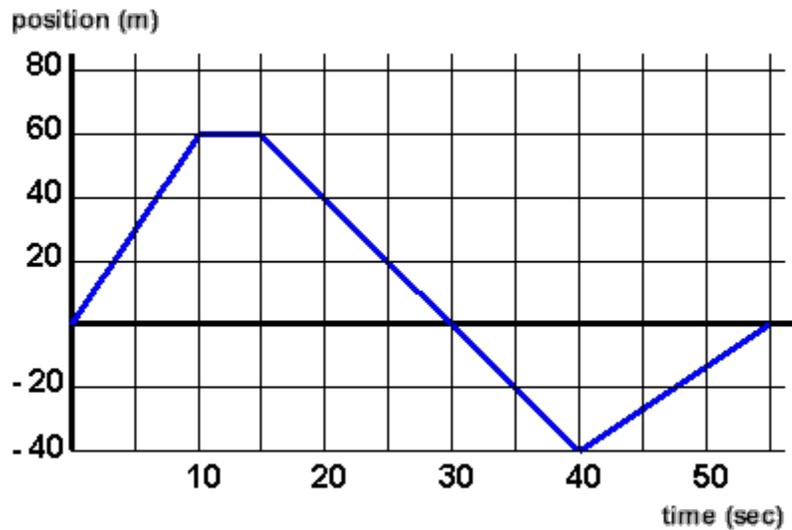
6) You are driving home on a weekend from school at 55 mi/h for 110 miles. It then starts to snow and you slow to 35 mi/h. You arrive home after driving 4 hours and 15 minutes. How far is your hometown from school?

- A) 180 mi
- B) 190 mi
- C) 200 mi
- D) 210 mi

7) A deer is grazing in a yard next to a house. When somebody opens a door, it spooks the deer and it runs away from the house with an average velocity of 8.5 m/s for .20 minutes into the edge of a woods that is 120 m away from the house. How far from the house was the deer before it was spooked?

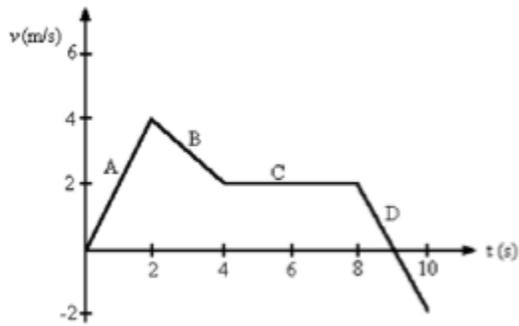
8) A small boy sees his mother and runs toward her. He starts 35.0 m from his mother and gets to 5.0 m from his mother before tripping. If he was running at 2.0 m/s, how long was the boy running before he tripped?

9) Use the position vs. time graph below to find the average velocities for each time interval.



- a. 0 to 10 seconds
- b. 10 to 15 seconds
- c. 15 to 40 seconds
- d. 40 to 50 seconds
- e. 0 to 20 seconds
- f. 0 to 30 seconds
- g. 0 to 40 seconds

10) Use the velocity vs. time graph below to answer the following questions.



- What is the average velocity in each region (A, B, C, D)?
- What is the displacement in each region?
- What is the displacement from 8 to 9 seconds?
- What is the displacement from 9 to 10 seconds?
- What is the total displacement from 0 to 10 seconds?
- What is the total distance traveled from 0 to 10 seconds?