

Physics 2414, Spring 2008

Group Exercise 1, Jan 24, 2008

Name 1: _____ OUID 1: _____

Name 2: _____ OUID 2: _____

Name 3: _____ OUID 3: _____

Name 4: _____ OUID 4: _____

Section Number: ____

1-Dimensional Kinematics

1) A train travels east for 60 miles and then turns around and travels west for 40 miles. The total time for the trip was 1 hour.

1a) What was the average speed of the train in meters/s?

1b) What was the average velocity of the train in meters/s?

1c) When answering part a) do you need to indicate a direction in your answer? Explain

1d) When answering part b) do you need to indicate a direction in your answer? Explain

2) A car is traveling east at 30 meters/s for 35 minutes. It then increases its speed to 40 meters/s for 50 minutes. It then reverses course and travels at a speed of 10 meters/s for 10 minutes.

2a) Sketch this on a distance vs time graph and also on a speed vs time graph

2b) Sketch this on a velocity vs time graph

2c) What is the average speed of the car?

2d) What is the average velocity of the car?
(Remember the issue about direction when answering parts 2c) and 2d)

3) A car accelerates east from 0 to 60 mph in 45 seconds. A motorcycle accelerates east from 0 to 25 meters/s in 30 seconds.

3a) Does the motorcycle or the car have a greater acceleration.

3b) By how much more?