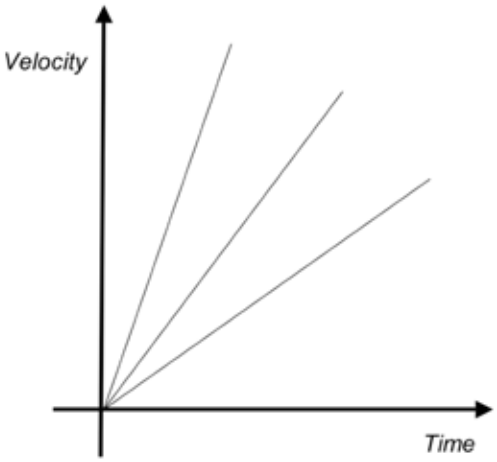
Tutorial 2 Homework Name _____

Interpreting graphs and equations Tutorial section_____

I. Graphs

A. On the velocity vs. time graph at right:

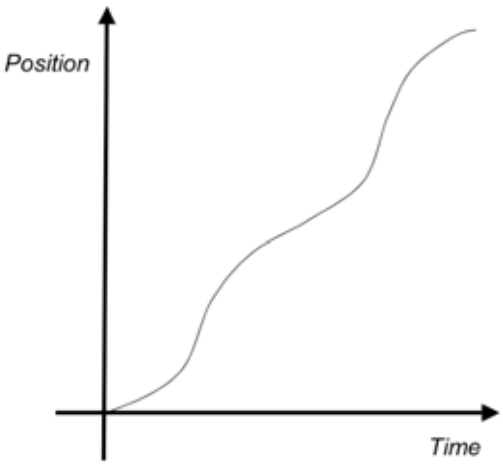


1. What do the three different lines represent?

2. What is the interpretation of the slope of each line?

3. What is the interpretation of the intercept of each line (the place where it crosses the vertical axis)?

B. Suppose a small ball rolling along a track produced the motion represented on the graph at right. What might the track have looked like? Sketch an arrangement of tracks you might set up in lab to produce that motion. Describe the motion in words.



II. Interpretations

Two cars start from the same place on the same road but at different times. Car 1 travels with constant velocity v_1 for a distance d and then stops. Car 2 starts at time t after car 1, travels with constant velocity v_2 until it has gone the same distance d, and then stops.

Give an interpretation of each of the following expressions, if such an interpretation exists. (Some expressions may have no interpretation relevant to the motions described.)

A. d/v_2

B. v_1t

C. d/t

D. v_2t

III. Algebraic expressions

A. A bug is 10 feet away from the base of a tree at noon. It is creeping slowly but steadily away from the tree at a constant speed v.

1. Write an algebraic expression for the bug's distance from the tree at time t, where t is the time that has passed since noon.

2. If the bug is 30 feet from the tree at 12:50 P.M., when will it be 60 feet from the tree?

B. A traveler left home on a trip across the desert. He took along enough provisions for a 19-day journey. He is able to travel with a constant speed s. After 15 days, he is still 100 km from his destination.

1. Write an expression for the number of days of provisions he will have left when he arrives. Explain your reasoning in detail.

2. Can your expression ever be negative? What would that mean and why?

