Section 10.7

Instantaneous Speed

Instantaneous speed is the speed at a particular moment in time.

For objects travelling at a constant speed, the instantaneous speed is the same at any time, and equals the constant speed.

Now how do we determine the instantaneous speed when acceleration is applied to distance / time?

1. If you want an accurate instantaneous speed you must make the time intervals very small.

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1. On a distance time graph the instantaneous speed is the slope of a tangent to the curve at that moment.

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1. On a distance time graph the instantaneous speed is read directly from the line on the graph for that moment. Every tangent that you could possibly draw creates a different slope and each value of the slope produces a point on the speed time graph

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What ever the speed we find the average speed from the slope of the straight line joining two points on the graph.

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Slope = Vav = ^d/^t

Classifying speed as constant, non-constant or changing, instantaneous, or average is useful for organizing and presenting our knowledge about the motion of an object.

Read pages 398-401

Answer the understanding concepts questions 1-7