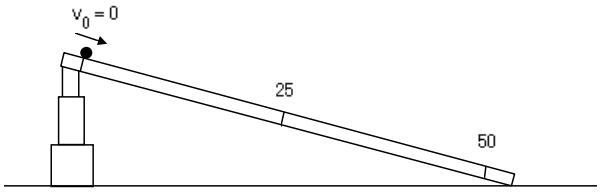
Unit IV – Worksheet # 1

Name _____

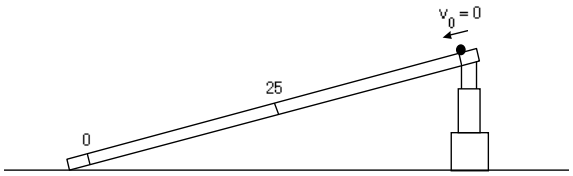
First Attempt | Corrections/Solutions

Problems 1-4 represent the initial conditions for a marble rolling along a frictionless incline. For each case, sketch a position vs time graph, a velocity vs time graph and a motion map. Assume a position of 0m is at the leftmost point on the ramp

1.



2.



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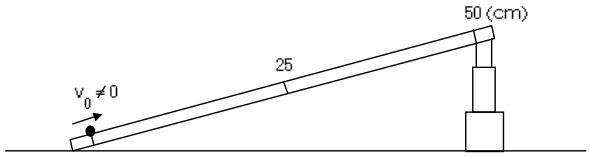
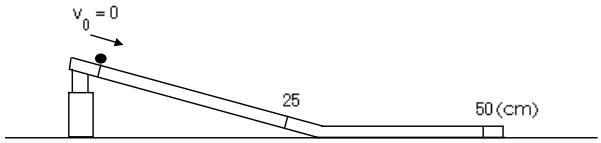
3.



4.



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First Attempt	Corrections/Solutions
For problems 5-6: While cruising along a dark stretch of highway at a speed of 25 m/s, you see that a bridge ahead has been washed out. You apply the brakes and come to a stop in 4.0 seconds. 5. Construct a position vs time graph, a velocity vs time graph and a motion map for the 4.0 second interval. 6. Using the velocity vs time graph from #5, determine: (a) the car's displacement for the 4.0 second interval (b) the car's acceleration for the 4.0 second interval.	

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7. Repeat #5 and #6(a), but now assume that you have a reaction time of 1.0 second. During this reaction time, the car travels at a constant 25 m/s. Once the brakes are applied, it then takes 4 seconds to come to a stop.

8. Another way that we can analyze motion is with an acceleration vs. time graph. Turn the graph shown below into **two different:**

A) position vs. time graphs
B) velocity vs. time graphs
C) motion maps

*That is, there are two possible correct answers for each graph. Can you find both?