Part 1 Constant Velocity Mathematical Model review:

1.) How was the mathematical model for constant velocity motion $[x_f = \vec{v}(t_f - t_i) + x_i]$ derived? What does each symbol mean?

2.) What is a 1-D frame of reference and why is it important? Why do you need to establish a frame of reference when you are using the constant velocity mathematical model?

3.) Write out the algebraic steps to get to from this form of the model $x_f = \vec{v} (t_f - t_i) + x_i$ to this form: $\vec{v} = \frac{\Delta x}{\Delta t}$? What does each symbol mean in this case?

Constant Velocity and Problem Solving – WS#4 Date:	Physics Name:	Pd
Part 2: Problem Solving using	the Solution Explanation	Form (SEF)
1. Ms. Barge makes Mr. Barge jog eight times around to your mom?!). Determine Mr. Barge's (a) average sp		
a) Write out in your own words what the question is ask	cing.	
b) Draw a picture to visualize the problem, list all given Reference which shows the origin for position and the	information and all assumptio e negative and positive directio	ons. Establish a <u>Frame of</u> on.
c) Write out the mathematical model(s) that you will use	e to solve the problem	
d) Solve the problem mathematically using the model as	the starting point.	
f) Explain the important physics concepts that you used	to solve the problem	

	ant Velocity and Problem Solving – WS#4	Physics Name:	Pd
	Labrador Retriever runs 50.0 meters in 7.20 seco		ne dog then runs half way back ir
a)	Write out in your own words what the question is as	king.	
b)	Draw a picture to visualize the problem, list all given Reference which shows the origin for position and the		
c)	Write out the mathematical model(s) that you will us	se to solve the problem	
d)	Solve the problem mathematically using the model a	s the starting point.	
e)	Create a qualitatively accurate x vs. t graph, and qualitatively accurate x vs. t graph accurate x vs. t graph, and qualitatively accurate x vs. t graph accurate x vs. t grap		.ph

	ant Velocity and Problem Solving – WS#4	Physics Name:	Pd
drops 1	et travels 2250 km westward at a speed of 960 to 805 km/hr for the next 1320 km of its westward is the average velocity for the trip?		a strong headwind and its speed
a)	Write out in your own words what the question is as	king.	
b)	Draw a picture to visualize the problem, list all given Reference which shows the origin for position and the		
c)	Write out the mathematical model(s) that you will us	e to solve the problem	
d)	Solve the problem mathematically using the model as	s the starting point.	
e)	Create a qualitatively accurate x vs. t graph, and qua (Also, use each of your graphs to independently calculated)		ph

f) Explain the important physics concepts that you used to solve the problem

	ant Velocity and Problem Solving – WS#4	Physics Name:	Pd
	o Metra trains approach each other on separate //hr. Initially, the two trains are 2.71 km apart. I		
a)	Write out in your own words what the question is a	sking.	
b)	Draw a picture to visualize the problem, list all give Reference which shows the origin for position and t		
c)	Write out the mathematical model(s) that you will u	ise to solve the problem	
d)	Solve the problem mathematically using the model	as the starting point.	
e)	Create a qualitatively accurate x vs. t graph, and qualitatively accurate x vs. t graph, and qualitatively calculated accurate x vs. t graph, and qualitatively accurate x vs. t graph accura		ph

	ant Velocity and Problem Solving – WS#4	Physics Name:	Pd
	Ford is traveling with a speed of 15 m/s and is 2 m/s. How far will the Chevy travel before catch		traveling in the same direction
a)	Write out in your own words what the question is as	king.	
b)	Draw a picture to visualize the problem, list all given Reference which shows the origin for position and the		
c)	Write out the mathematical model(s) that you will u	se to solve the problem	
d)	Solve the problem mathematically using the model a	s the starting point.	
e)	Create a qualitatively accurate x vs. t graph, and qu (Also, use each of your graphs to independently calculated)		h

f) Explain the important physics concepts that you used to solve the problem