

Unit 1 : Kinematics Review

1. Vectors :

Adding and Subtracting displacement and velocity vectors:

<p>Example : Displacement Vectors A hiker walks 4.5 km [N], then makes a 45° turn to the right and walks another 6.4 km [N45°E]. What is the magnitude of her displacement?</p>	<p>Example : Velocity Vectors A motorboat heads due east at 8.0 m/s relative to the water across a river that flows due north at 5.0 m/s. What is the velocity of the motorboat with respect to the shore?</p>
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2. Uniform Motion vs. Accelerated Motion :

All of our problems deal with motion in a _____ line.

There are two situations we deal with : constant _____ or constant _____.

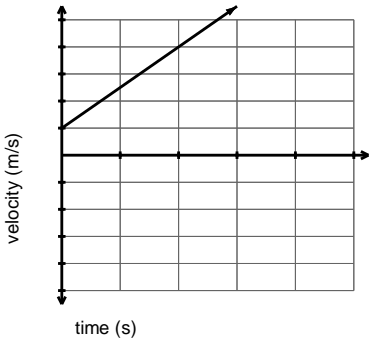
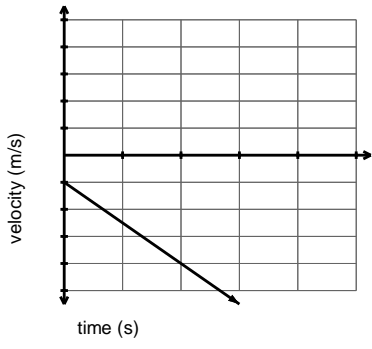
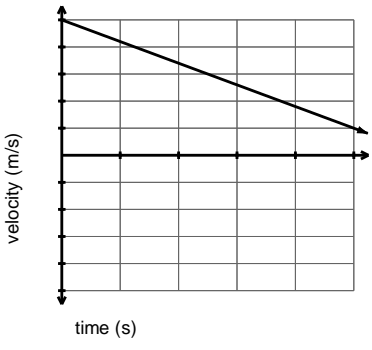
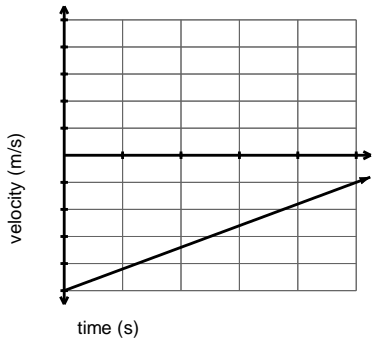
Displacement, velocity and acceleration can be either _____ or _____.

First we decide which way is positive.

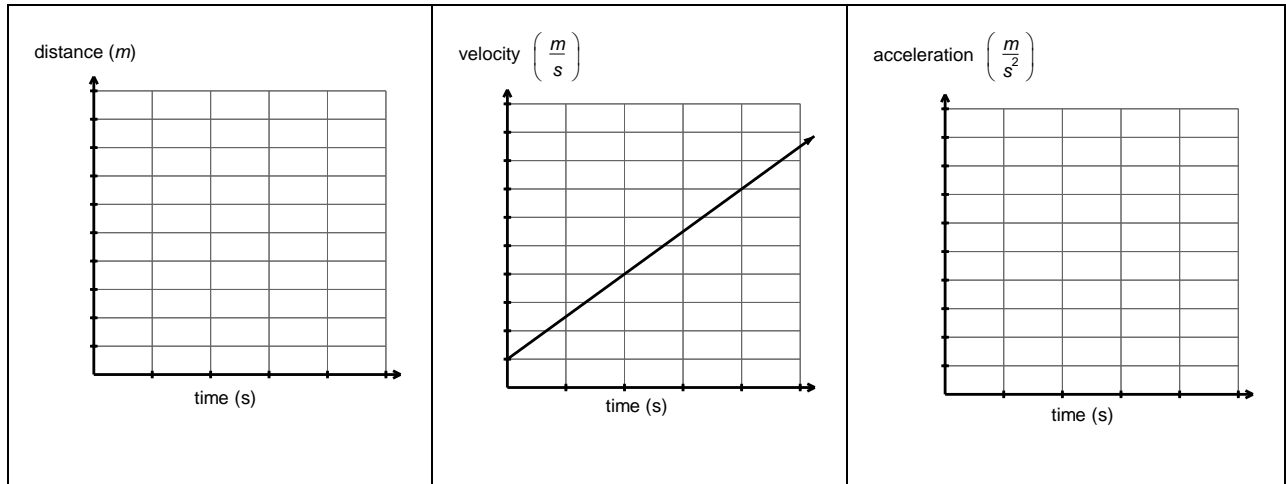
A negative displacement just means _____.

Negative velocity is just speed in the _____ direction.

Negative acceleration means the velocity is becoming more _____ as time goes on. If the gas pedal is really the “ _____ ” and the brake is really the “ _____ ” When you push the brake down, your velocity becomes more negative (even though you are still going in a _____ direction).

 <p>velocity (m/s)</p> <p>time (s)</p>	 <p>velocity (m/s)</p> <p>time (s)</p>
description _____	description _____
 <p>velocity (m/s)</p> <p>time (s)</p>	 <p>velocity (m/s)</p> <p>time (s)</p>
description _____	description _____

Graphing (cont'd) :



3. Word Problems (One Object):

Identify the type of problem : _____ or _____.

Identify the given(s) : _____.

Identify the required variable (unknown) ----- Select the right formula and solve.

<p><u>Constant Velocity (Uniform Motion)</u></p> 	<p><u>Constant Acceleration</u></p>
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4. Word Problems (Two Objects – Chase Problems):

The strategy in these problems is to try to find the _____ when the _____ for the two objects are the same.

Set _____, and solve for _____

Other stuff to know ☺...

Acceleration due to gravity = _____.

Convert from cm to m and km to m _____.

Convert from km/hr to m/s (and back) _____

Practice Problems:

Handout: #1-5 (make sure you can do #1 and #2 – #3, #4 and #5 are challenge problems).

Textbook: page 49 # 4., 7a.b., 13-17

page 114, # 2, 14a., 15, 17, 18