JBS Introduction to Physics Name: _____ Number:

Objectives for Unit #1: Intro to Motion

You should be able to do the following:

1. Identify the basic measurements and units of the metric system. Convert from one metric unit to another, especially for length and mass. Convert measurements in seconds to minutes to hours.
2. Given data, make a proper graph. You should be able to
    a. Put the independent and dependent variables on the proper axes.
    b. Label the axes and include units.
    c. Write a proper graph title.
    d. Include a key to distinguish lines.
    e. Make a scale given some data
    f. Plot the points
3. Distinguish between a *direct* and an *indirect* relationship of the variables on a graph.
4. Given a description of an experiment, identify the independent and dependent variables.
5. Use proper form and units to solve problems.
6. Distinguish between an object's position, the distance an object has traveled, and an object's displacement.
7. Given a verbal description of an object's motion, draw this motion on a graph and on a motion map.
8. From a verbal description or from a graph, calculate the distance an object has traveled and calculate the object's displacement.
9. Explain the difference between speed and velocity.
10. Calculate the velocity, distance or time of an object's motion given the relationship, $v = \frac{d}{t}$.
11. Given words or a graph of an object's motion, draw a proper motion map of this motion.
12. Describe an object's position using coordinates on a graph.
13. Explain the relationship between the slope of the line on a position-time graph and velocity.
14. Calculate the slope of a line on graph, especially to determine an object's speed or velocity.
15. Given a position-time graph, draw the velocity-time graph. Given a velocity-time graph, draw the position-time graph.
16. Match a position-time graph with its corresponding velocity-time graph.
17. Given a position-time graph, determine whether the object is not moving or moving with a constant speed. Evaluate whether the object's velocity is positive or negative.
18. Given a velocity-time graph, determine whether the object is not moving or moving with a constant speed.
19. Given a position-time graph, calculate the average velocity for a certain time interval.

Your textbook has many useful practice problems at the end of each chapter. Use this table to practice for your test. I have selected the questions appropriate for your test.

Section	Chapter 1	Chapter 2	Chapter 4.1 & 4.2
Vocabulary	#1-8	#1-5, 7-12	#1, 3-12
Concepts	#2, 4-6, 8	#4, 9-11	#1-10
Problems	#1-12	4, 5	#1-19
Applying your Knowledge	none	none	1-4

Don't forget to try the section reviews for the pages we have read. Look specifically at these:

Section	Page #	Question #	
1.1	8	#1, 3, 6 - 9	
1.2	12	#2, 4, 5, 6, 7, 8	
1.3	17	#3, 4, 6	
2.3	47	#1, 2, 3, 4, 5	
2.4	51	#4	
3.2	67	#2, 3, 5	
4.1	86	#1 - 8	
4.2	91	#1-9	