Ch 2: Newton's 1st Law of Motion name:

Study Guide format: 27 Q; 22 mc; 5 T/F

**Vocab**

*inertia speed average speed Newton (N)*

*net F velocity instantaneous speed constant velocity*

*vector quantity weight mass Newton's 1st law*

*rate friction equilibrium (static and dynamic)*

**Formulae**; (units)

Net F: **FNET= Sum of all Forces**; (N) Speed/velocity: **v =d/t**; (eg. m/s)

Avg Speed/velocity: **v =dtotal/ttotal**; (eg. m/s)

**Things you MUST know:**

1. Rest, constant velocity, and both types of equilibrium (static & dynamic) describe an object without a change in its state of motion (inertia).
2. Be able to calculate Fnet from a set of forces. (feel free to sketch free body diagrams)
3. Why do objects maintain their t=states of motion? By virtue of their\_\_\_\_\_\_\_\_\_\_\_\_.
4. Be able to calculate 'hanging gymnastic rings/standing on scale(s)' problems sim. to the hw .
5. What, essentially differentiated Galileo's science from Aristotle's (modern from ancient)?
6. In order to maintain ***constant velocity***, one must apply a F **equal** to that of Ffriction.
7. Remember: when an object is in dynamic equilibrium, it travels at a constant v with a Fnet of 0.
8. Why is F a vector quantity?
9. This will come up again & again (& again) in our future: Coach Bowman & Dr. Wackes walk into a physical science classroom and permit Mr. e to stand between them & push each of them with equal F. Which one moves faster? (hint: which one has less inertia?--that's the one)
10. Be able to predict where a dropped ball will fall when inside a moving vehicle (truck).
11. What path does a rock take if it is whirling about on a string and the string breaks?
12. Is a F necessary to keep a moving object moving in space?
13. According to Aristotle, why do objects rise or fall (or come to rest)?
14. Carefully distinguish between speed & velocity.