1. What is the difference between average velocity and instantaneous velocity?
2. How do you convert position, velocity, and acceleration graphs?
3. What is velocity on a position vs. time graph?
4. What is displacement on a velocity vs. time graph?
5. What kind of shape is seen on a position vs. time graph for positive acceleration? Negative?
6. What is the acceleration of a projectile at the top of its trajectory?
7. For elevator problems, when will the Tension or Normal Force be larger than the Weight? Smaller? Equal?
8. If , what would happen to the magnitude of the *x*-variable once the *t* variable is tripled?
9. Suppose you have two variables *R* and *T*. Their relationship is such that What would happen to the *T* value once the *R* value is doubled?
10. What is the direction of the net force for things moving in uniform circular motion?
    1. Where along a vertical circle would the net force not be in this direction?
11. Why do astronauts feel weightless?
12. What are the conditions for an object to *slow down*? To *speed up*?
13. What are the two things that affect the magnitude of friction experience by two rubbing objects?
14. Does static friction *have* to exist if an object is stationary?
15. For a *banked curve*, which force is responsible applying the inward force?
16. For a *flat curve*, which force is responsible for applying the inward force?
17. At what point in an object’s projectile trajectory will the *velocity* be at a minimum?
18. At what point in an object’s projectile trajectory will the *acceleration* be at a minimum?
19. If two masses and , where were to be in contact and pushed to the side, which scenario would provide the smaller contacting force between the two masses?
20. What is the centrifugal force?
21. For a satellite orbiting a larger mass, what would happen to the orbital period if you double the radial distance of the orbit?
22. For an object moving in a circular path, how would the centripetal acceleration be affected if you doubled the velocity of motion and doubled the radius?
23. How do you determine the relationship between two variables?
24. Suppose you wanted to design an experiment to discover the relationship between normal force and friction force, what are some laboratory equipment items you could utilize?
25. If a meteor was to approach Earth, what would happen with its *acceleration* the closer it got to Earth?
26. Is it possible to escape the influence of gravity completely within the observable universe?
27. Why does a bullet dropped an a bullet fired land at the same time?
    1. Which one would hit the ground with a faster speed?
28. If on a flat surface, at what angle should you launch a projectile to obtain the maximum range?
    1. Suppose now that the starting point was higher than the landing point. Would it be launched at the same angle?
29. When does Mr. Hart care about significant figures?
30. How can you determine the angle of a banked curve?
31. Are you stationary right now?
32. If you wanted to drive a boat directly north across a river, but the river was flowing to the east, which direction would you have to aim the boat?
33. What kind of friction is involved in walking?