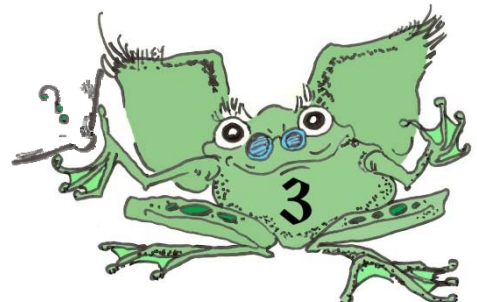
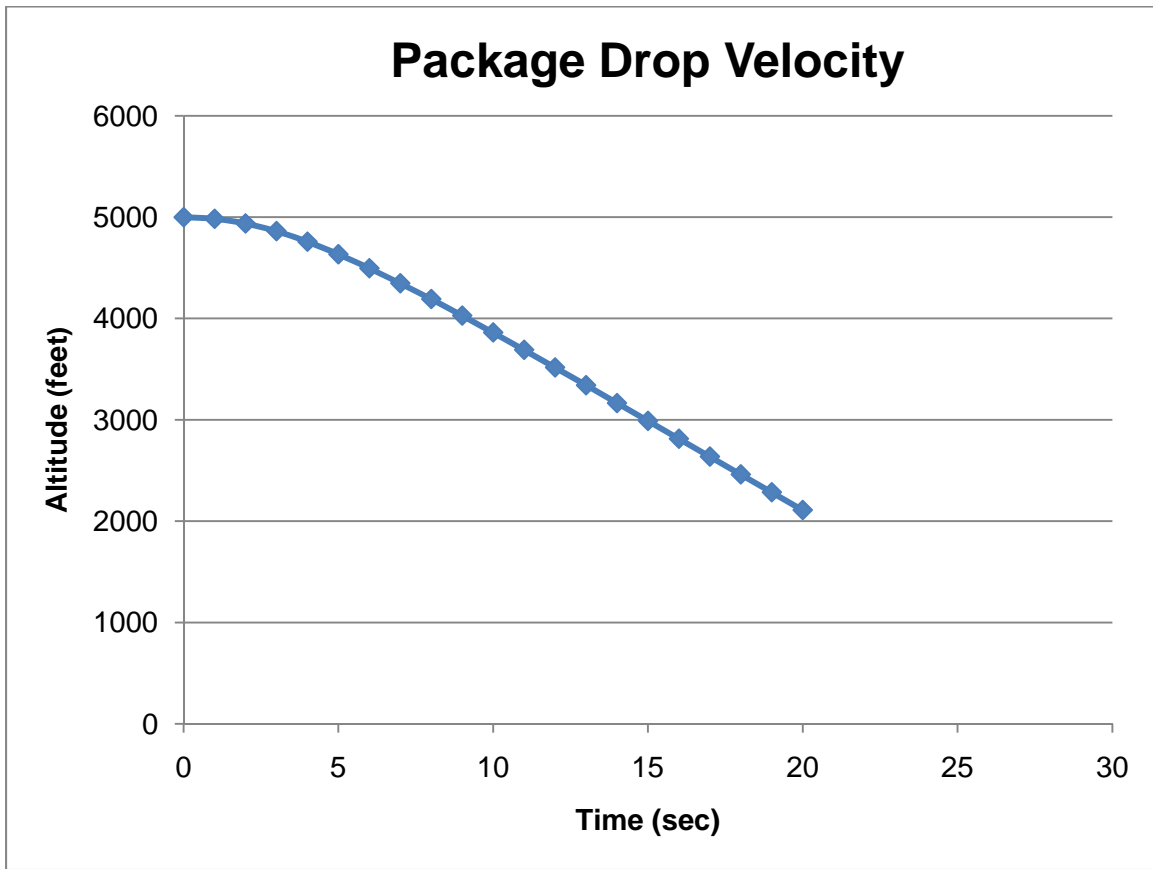


MiSP Force and Gravity Assessment

Name _____

Date _____

Suppose you dropped a package from an airplane that was traveling at an altitude of 5,000 feet. The package was allowed to free-fall for 20 seconds and then a timer released a parachute attached to the package. The graph below represents the free fall portion of the package's fall to the ground.



1. Determine the average velocity of the package over the first 20 seconds. State the definition of *velocity* as part of your answer.

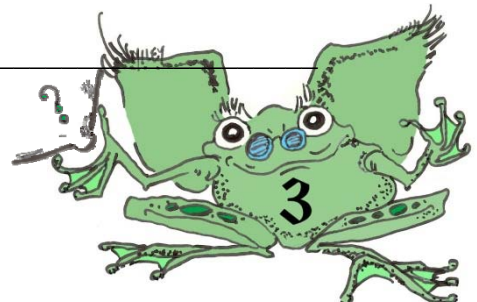
2. During the first 10 seconds shown on the graph, the package is accelerating. What is acceleration?

3. Why does the package accelerate? What force causes the acceleration?

4. Eventually the package travels at a uniform velocity. What is this uniform velocity called?

5. What causes the package to stop accelerating?

6. The timer attached to the parachute on the package has been set for 20 seconds. Draw a line on the graph to depict a possible velocity of the package after the parachute opened. Explain what happens when the parachute opens and why it happens.



7. Is the slope the same in all parts of your graph, including the part you drew to represent what happens when the parachute opens? If the slope is the same, explain why. If not, explain where the slope changes on the graph; state if the slope is increasing or decreasing during that interval and explain why it is changing.

8. Explain why you cannot write a linear equation that corresponds to your graphed data.

