Section 9.2
Calculating Acceleration
Study Notes

By the end of section 9.2 you should be able to understand the following:

❑   The slope of a velocity-time graph is average acceleration.
❑   Acceleration is measured in m/s². The relationship of acceleration, change in velocity, and time interval is given by the equation $\vec{a} = \dfrac{\Delta v}{\Delta t}$
❑   The acceleration due to gravity near the surface of Earth is 9.8 m/s² downward

NOTES

In what situations would you want to use a position-time graph, and when would you want to use a velocity-time graph?	1. 2.
Sketch a velocity-time graph showing a car undergoing constant acceleration. Why is the best-fit line on a graph like this called the average acceleration?	1. 2.
Describe the three types of acceleration shown on the school bus graph, figure 9.12, on page 395.	1. 2. 3.

Do the Reading Check on page 395

NOTES

On a velocity-time graph, what is the slope of the best-fit line equivalent to? What is the formula for finding acceleration off of the graph, and what is the formula for finding acceleration in general?	1. 2. 3.
What is gravity? Which has a greater acceleration due to gravity, a foam baseball or a real baseball? Which will hit the ground first if dropped from a tall building?	1. 2. 3.
What is the value given for the acceleration due to gravity, *g*, for all object on Earth?	1.