Name: _____ Date: ____ Period: ____

Acceleration

- Acceleration is the _____ at which the _____ of a moving object changes. (Actually includes both speeding up and slowing down)

-Velocity describes the _____ of an object.

-Acceleration describes how the _____ changes.

acceleration = _____ *or* a = _____

-Possible units for velocity are: _____

-Since acceleration is the rate at which velocity changes its unit will be any unit for _____ over _____. Ex. _____

Sample Problems:

-Captain America is running north at a velocity of 5 m/s. Noticing that he is not catching up to the villain he is chasing he decides to pick up his speed. Within one second he increases his velocity to 10 m/s. Within one more second he increases his velocity from 10 m/s to 15 m/s. What is his acceleration?

-How quickly would the Batmobile accelerate if it's forward velocity changed from 0 to 32 meters per second in 4 seconds?

-What would be the acceleration of Hawkeye's arrow if its speed increased from 204 miles per hour to 222 miles per hour within 2 seconds?

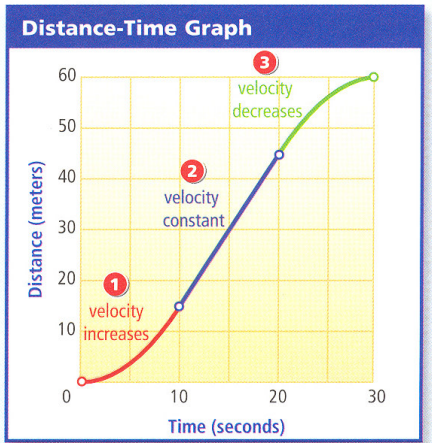
(OVER)

-_____ is a word often used to describe a decrease in velocity. Since acceleration includes ***any*** change in velocity (*increase or decrease*) deceleration is calculated using the same formula.

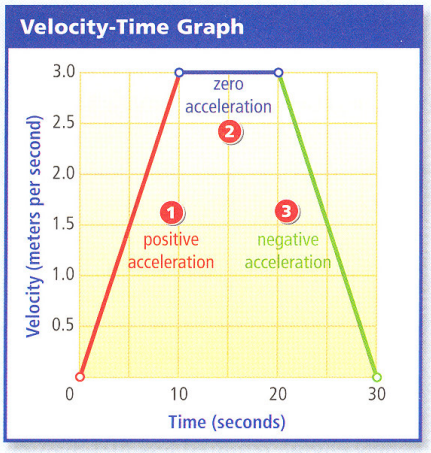
-When calculating deceleration you will always end up with a _____ answer.

-Since acceleration measures changes in velocity, an object that changes either _____ or _____ is accelerating. An object may be accelerating even if its speed is constant.

Graphing Speed and Acceleration



(aka Speed graph)



(aka Acceleration Graph)

Line Curved up= _____ _____

Line Curved down= _____ _____

Straight line angled up= _____ _____

Straight line angled down= _____ _____

Flat Horizontal line= _____ _____

Flat Vertical line= _____ _____