SCIENCE

NAME: PERIOD: DATE:

ACCELERATION NOTES

Acceleration is the rate at which an object changes velocity

Acceleration tells you how quickly an object is speeding up.

Acceleration is when the voice on a commercial says a sports car "Goes from zero to 60 in 3 seconds."

Acceleration is the feeling you get when the roller coaster starts dropping from the highest hill.

Acceleration is tells if you can "stop on a dime" or "grind to a halt."

When the Flash or the Road Runner disappears in an instant; it's because they accelerate quickly.

When your bus driver steps on the gas and the bus sl o o o w ly gets up to speed, that's acceleration.

The formula for acceleration is:

$$\frac{\text{the velocity the object is going at the end } \mathbf{(V_{FINAL})} - \text{ the velocity the object was going when it started } \mathbf{(V_{INITIAL})}}{\text{the amount of time the object was accelerating } \mathbf{(T)}} = \text{acceleration } \mathbf{(A)}$$

Most of the time people write it like this: ⇨ $\frac{\mathbf{V_{FINAL} - V_{INITIAL}}}{\mathbf{T}} = \mathbf{A}$

So if a car starts at 0 miles/hour south and 5 seconds later is going 50 miles/hour south, then it's acceleration is

$$\frac{\text{the velocity the object is going at the end } \mathbf{(50\ m/h)} - \text{ the velocity the object was going when it started } \mathbf{(0\ m/h)}}{\text{the amount of time the object was accelerating } \mathbf{(5\ sec)}} = \text{acceleration } \mathbf{(A)}$$

$\frac{\mathbf{(50\ m/h) - (0\ m/h)}}{\mathbf{(5\ sec)}} = \mathbf{A}$ ⇨ subtract $\frac{\mathbf{(50\ m/h)}}{\mathbf{(5\ sec)}} = \mathbf{A}$ ⇨ reduce/divide $\frac{\mathbf{(10\ m/h)}}{\mathbf{(1\ sec)}} = \mathbf{A}$

finish

10 miles/hour/sec = A