Gwinnett School of Math, Science, and Technology

AP Physics: Mechanics/Electricity & Magnetism Notes

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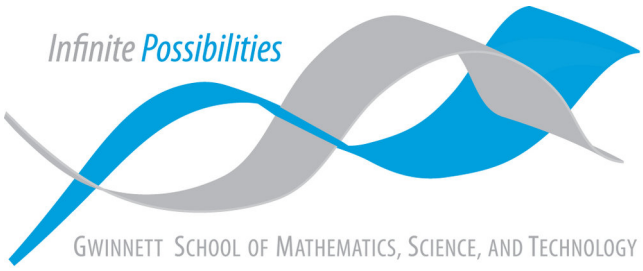

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1 Kinematics

1.1 Variables

Position

- Typically given by the variable x

Time

- Typically given by the variables t

Displacement

- Defined as the change in position ($X_f - X_i$)
- Given by the variable Δx

Distance

- You have to take the magnitude of vectors for every time you change position
- $|x_2 - x_1| + |x_1 - x_0| + ...$

Average Velocity

- Defined as the change in displacement over time
- $\frac{\Delta x}{\Delta t} = V_{\text{avg}} = \bar{V}$

Velocity

- Defined as the change in displacement as time approaches 0
- $\lim_{\Delta t \to 0} \frac{\Delta x}{\Delta t} = \frac{dx}{dt} = V$