1. Dimensional Analysis

- There are four basic dimensions:

L	M	T	Q
length	mass	time	charge (don't worry about this one)

Everything can be represented in these dimentions. Ex. speed = meters/sec = L/T

acceleration = meters/sec^2 = L/T^2

Dimensional Analysis can be a huge help when solving MC problems because you can eliminate answers that are dimensionally incorrect.

Additionally the following rules exist:

- You can only add and subtract quantities that are dimensionally the same.
- Can multiply divide dimensions like fractions

Ex. What are the dimensions of

$2\pi\sqrt{\frac{l}{g}}$ where l = length
g = acceleration due to gravity

$$= 2\pi\sqrt{\frac{L}{L/T^2}} = 2\pi\sqrt{T^2} = \underbrace{2\pi}_{\text{constant doesn't change units}} \cdot T = T$$