Week 1 MB3A Handout

Combinations and Permutations

Permutations

- Different ways in which a collection of items can be arranged
- The order matters (different order of items is a different combination)
- nPr = n! / (n-r)!
- 1! = 1
- 0! = 1

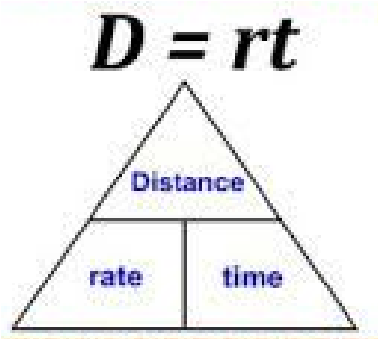
Combinations

- Different selections possible from a collection of items
- The order doesn't matter (if the items are ordered differently, it's still the same combination)
- nCr = n! / [r! * (n-r)!]
- nCn = 1
- nC0 = 1
- nC1 = n
- nCr = nC(n-r)

Unit Conversion

- Divide/Multiply by the conversion factor to cross out units with each other

Distance Formula:



Volume of a Cylinder: $V=\pi r^2 h$

Area of a Circle: πr^2

Solving a System of Equations:

- Graphing, you simply graph both equations, and wherever they intersect is your solution.
- Substitution, you solve one equation for one variable, in terms of the other. For example, you solve for y. Then you plug this in for y in the other equation and solve it. Once you get one value, you plug it into an equation to find the value of the other variable.
- Elimination is when you subtract one equation from another to eliminate one of the variables, leaving you to solve for the other. Sometimes you may need to multiply one of the equations by a certain number to make elimination possible.

Pythagorean Triples: