**Probability**

What did I learn in this module:

* Single event probability
  + Ways to express probability
* Basic rules of probability
  + Single event probability
* Basic rules of probability
  + All probabilities are between 0 and 1
  + There are no negative probabilities
  + The total of all possible outcomes is 1
  + The probability of an event NOT happening is equal to 1 minus the probability of the event happening
* Calculation of combinations and permutations
  + Factorials
    - Factorials are not defined for negative numbers. In other words, (-5)! is not defined. That means it cannot be calculated, like dividing by zero.
    - Factorials are not defined for anything that is not a whole number (non-integers). So you cannot calculate 6.25!.
    - The factorial of zero will always equal 1, as will the factorial of 1, as shown below:
      * 0! = 1
      * 1! = 1
  + Calculating Combinations
  + Permutations
    - Combinations Vs Permutations
* Multiple event probability
  + Boolean Logic : And, Or, Not
* Probability of mutually exclusive and non-mutually exclusive events
* Probability with and without replacement