* Probability density and mass functions are maps from probabilities to likelihoods (the actual outcomes)
  + Always non-negative
  + Can have a value of 0
  + Can increase or decrease but a negative probability is impossible
* Probability density functions
  + Can use the plot to identify what is most likely to happen based on peak
    - The peak is the mean so closer to the center is more likely
* Cumulative probability functions
  + Cumulative distribution for fish masses
  + Cumulative density is the accumulated area under the density curve to the left of x
  + Between 0-1
  + Cumulative density function will always increase because it is accumulating
  + **Slide 92** shows the relationship between cumulative density functions and probability density functions
    - the CDF is always increasing because it increases in the PDF as you follow the x-axis
    - as mass increases you include all the previous mass values
* Quantile functions
  + Inverse of the other two
  + Tells you what length will be greater than 90% of the other fish
  + Uses the percentile to determine the length of interest
* Parametric distributions
  + Defined by mathematical functions with at least one parameter, usually two
* Empirical distributions
  + Computed from observations
  + No analytical function, the shape is computed from data
* Bernoulli Distribution
  + Special case of the binomial distribution
  + Only has two elements, true/false, success/failure, present/absent
  + Produces binary outcomes
  + One parameter: the probability of success
* Binomial distributions
  + N is the number of trials
  + P is the probability of success in an individual trial
* Poisson distribution
  + Good for things that occur randomly at a certain constant rate
  + Census in the same area over a range of times
* T-distribution
  + Finite sample version of the normal