**Distribution Functions in R**

* Density - prefixed with a **d**
  + Accepts a quantity
  + Returns a probability
  + **PDF** for **continuous** distributions –returns the height of the curve at a specified value X
  + **PMF** for **discrete** distributions – P(X = x)
* Distribution - Prefixed with a **p**
  + Accepts a quantity
  + Returns a cumulative probability
  + **CDF** – returns the area of the curve <= x
* Quantile - Prefixed with a **q**
  + Accepts a probability
  + Returns a Z-value (Critical Value) for continuous distributions
  + **Inverse CDF**
* Random - Prefixed with a **r**
  + Returns randomly generated numbers

**Distributions**

Continuous Distribution - chi-squared, F, normal, Student's, uniform

* Most useful for probability calcs - "p" & "q" functions (CDF & Inverse CDF)
* The density (PDF) calculates the height of the curve for a given value
  + Useful for plotting a normal curve
  + Not useful for calcs on its own; must do something like (same as pnorm (0)):
    - Integrate (dnorm, lower = -Inf, upper = 0)

Discrete Distribution - binomial, hypergeometric, Poisson

* Most useful for probability calcs - "d" function calculates the density (PMF), which is a probability - P(X = x)
* Note about "q" for binomial distribution (and possibly discrete distributions)
  + pbinom (x, n, p) = qbinom (pbinom (x, n, p), n, p) -> CDF = Inverse CDF
  + dbinom (x, n, p) = qbinom (dbinom (x, n, p), n, p, lower.tail = F)