February 8 – More Continuous Distributions

1. Today all data are from continuous variables

2. The normal distribution

\[ f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{1}{2}(\frac{x-u}{\sigma})^2} \quad -\infty < x < \infty \]

(a) Qualitative properties: unimodal, symmetric, “bell-shaped”

(b) Sample applications

(c) R - dnorm(x,mu,sigma), pnorm(x,mu,sigma), qnorm(p,mu,sigma)

(d) The standard normal (Z) distribution

3. The uniform distribution dunif(x,a,b)

4. The Weibull distribution dweibull(x,alpha,beta)

5. The beta distribution dbeta(x,alpha,beta)

Homework, Due Friday, February 11

1. Read Devore and Farnum, Section 1.4 and “gaze” at Section 1.5.

2. Do problems 32,34,38,40 of Devore and Farnum Section 1.4 and problem 50 of Section 1.5