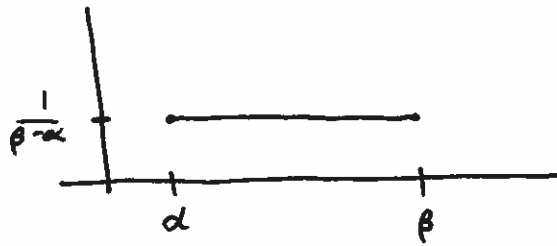


## § 5.1 Continuous Probability Distributions

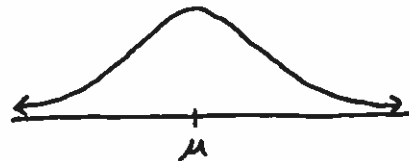
The probability distribution for a continuous random variable,  $x$ , can be represented by a smooth curve - a function of  $x$ , denoted  $f(x)$ . The curve is called a density function or frequency function. The probability that  $x$  falls between two values,  $a$  and  $b$ , denoted by  $P(a < x < b)$ , is the area under the curve between  $a$  and  $b$ .

Some common, continuous probability distributions are:

Uniform



Normal



$\chi^2$  (chi-squared)



At this point we will concentrate on the normal distribution and the Empirical Rule.

Note for any continuous distribution,  $P(x=c) = 0$