```
> unifdat = runif(1000,1,5)        #body weights(lb) of cane toads G&M p.75
> hist(unifdat)
> summary(unifdat)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  1.006   1.985   3.001   2.984   3.947   4.998
```

Uniform U[a,b], f(x) = 1/(b-a), F(x) = (x-a)/(b-a),
moments: E(X) = (a+b)/2, Var(X)=(b-a)^2/12

Normal Distribution Examples, N("mu", "sigma")

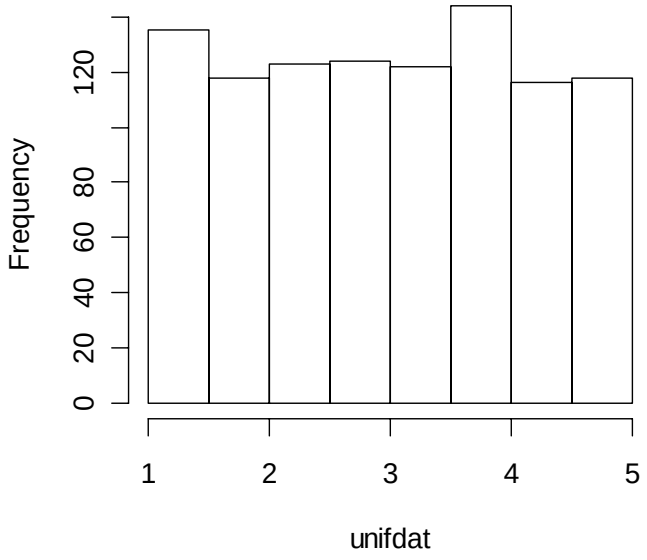
```
> #SW 4.1 serum cholesterol, age 17 N(176,30)
> qnorm(.9, 176,30)
[1] 214.4465
> #how many sd above mean? 1.28 = (214.45 - 176)/30
> qnorm(.84, 176,30)
[1] 205.8337
> qnorm(.16, 176,30)
[1] 146.1663
> #gives rise to "84/16" rule; 84th - 16th percentiles = 2*sd; Tab3 z=1 -> .84
> #what fraction of the area under distribution (prob) +/- 2sd from mean?
> pnorm(176 + 60, 176,30) -  pnorm(176 - 60, 176,30)
[1] 0.9544997
> # see SW fig 4.13 p.125
> # SW Ex 4.5, Lengths of Fish (herring) N(54, 4.5)
> pnorm(60, 54, 4.5)  #p.126 question (a)
[1] 0.9087888
> #60 is 4/3 sd above the mean, text slightly low with z=1.33
> pnorm( 60, 54,4.5) -  pnorm(58, 54,4.5) # part(d) p.127
[1] 0.09582018
> qnorm(.7, 54, 4.5)  #p.129 question (a)
[1] 56.3598
```

KEEPSAKE
 App C. Compendium Statistical distributions(Dalgaard, Intro Statistics with R)
Normal distribution
dnorm (x) Density
pnorm (x) Cumulative distribution function, P(X <= x)
qnorm(p) p-quantile, x : P(X <= x) = p
rnorm(n) n (pseudo-)random normally distributed numbers

Distributions
Same convention (d-q-r) for density, quantiles, and random numbers as normal distribution.

pnorm(x,mean,sd)	Normal
plnorm(x,mean,sd)	Lognormal
pt (x, df)	Student's t
pf(x,nl,n2)	F distribution
pchisq(x,df)	X2
pbinom(x,n,p)	Binomial
ppois(x,lambda)	Poisson
punif(x,min,max)	Uniform
pexp(x,rate)	Exponential
pgamma(x,shape,scale)	Gamma
pbeta(x,a,b)	Beta

unifdat.emf


Histogram of unifdat
Frequency
0
20
40
60
80
120
1
2
3
4
5
unifdat