Confidence Intervals

m = 100; n=50; p = .7; # toss 50 coins 100 times

phat = rbinom(m,n,p)/n # divide by n for proportions

SE = sqrt(phat\*(1-phat)/n) # compute SE

alpha = 0.10;zstar = qnorm(1-alpha/2)

matplot(rbind(phat - zstar\*SE, phat + zstar\*SE),

+ rbind(1:m,1:m),type="l",lty=1)

abline(v=p) # draw line for p=0.5

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M<- mean(x)

n<- 100;

y=c(100); SE=c(100); lb=c(100); up=c(100);

tstar=qt(.975,n-1); u=c(100);

for (i in 1:100) {u=sample(x,n,replace=T);

+ y[i]=mean(u); SE[i]=sd(u)/sqrt(n); lb[i]=y[i]-tstar\*SE[i]; ub[i]=y[i]+tstar\*SE[i];}

matplot(rbind(lb,ub),rbind(1:100,1:100),type="l", lty=1); abline(v=M);

n=15; m=10; s=2;

> y=c(100); SE=c(100); lb=c(100); ub=c(100)

> v=c(n);

> for (i in 1:100) {v=rnorm(n,mean=m,sd=s);

+ y[i]=mean(v); SE[i]=sd(v)/sqrt(n); lb[i]=y[i]-tstar\*SE[i];ub[i]=y[i]+tstar\*SE[i];}

> matplot(rbind(lb,ub),rbind(1:100,1:100),type='l',lty=1); abline(v=10);