

Parent population (can be changed with the mouse)

mean= 16.00
median= 16.00
sd= 5.00
skew= 0.00
kurtosis= 0.00

Clear lower 3
Normal

Prob of a value greater than 21

Sample Data

Sample:
Animated
5
1,000
10,000

Reps= 10000
mean= 16.01
median= 16.00
sd= 2.22
skew= -0.03
kurtosis= -0.02

Distribution of Means, N=5

Mean
N=5
Fit normal

None
N=5
Fit normal

green: probability of greater are than 21

probability of a sample of 5 having a mean greater than 21

$\sigma_{\bar{x}}$

Population: $N(16, 5)$

$\mu = 16$
 $\sigma = 5$

Sampling Distribution
- 10 000 samples ($n = 5$)

$\mu_{\bar{x}} = 16.01$ (mean of sample means)

$\sigma_{\bar{x}} = 2.22$ (std dev of sample means)

($\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{5.0}{\sqrt{5}} = 2.236$)

close!

Sampling Distributions

mean= 16.00
 median= 16.00
 sd= 5.00
 skew= 0.00
 kurtosis= 0.00

Parent populaton (can be changed with the mouse)

Clear lower 3
 Normal

Sample Data

Sample:
 Animated
 5
 1,000
 10,000

Reps= 10000
 mean= 15.99
 median= 16.00
 sd= 0.99
 skew= 0.03
 kurtosis= -0.01

Distribution of Means, N=25

Mean
 N=25
 Fit normal

None
 N=5
 Fit normal

$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{5.00}{\sqrt{25}} = 1.00$

Increasing the sample size decreases the standard deviation of the sample means ($\sigma_{\bar{x}}$)

Java Applet Window