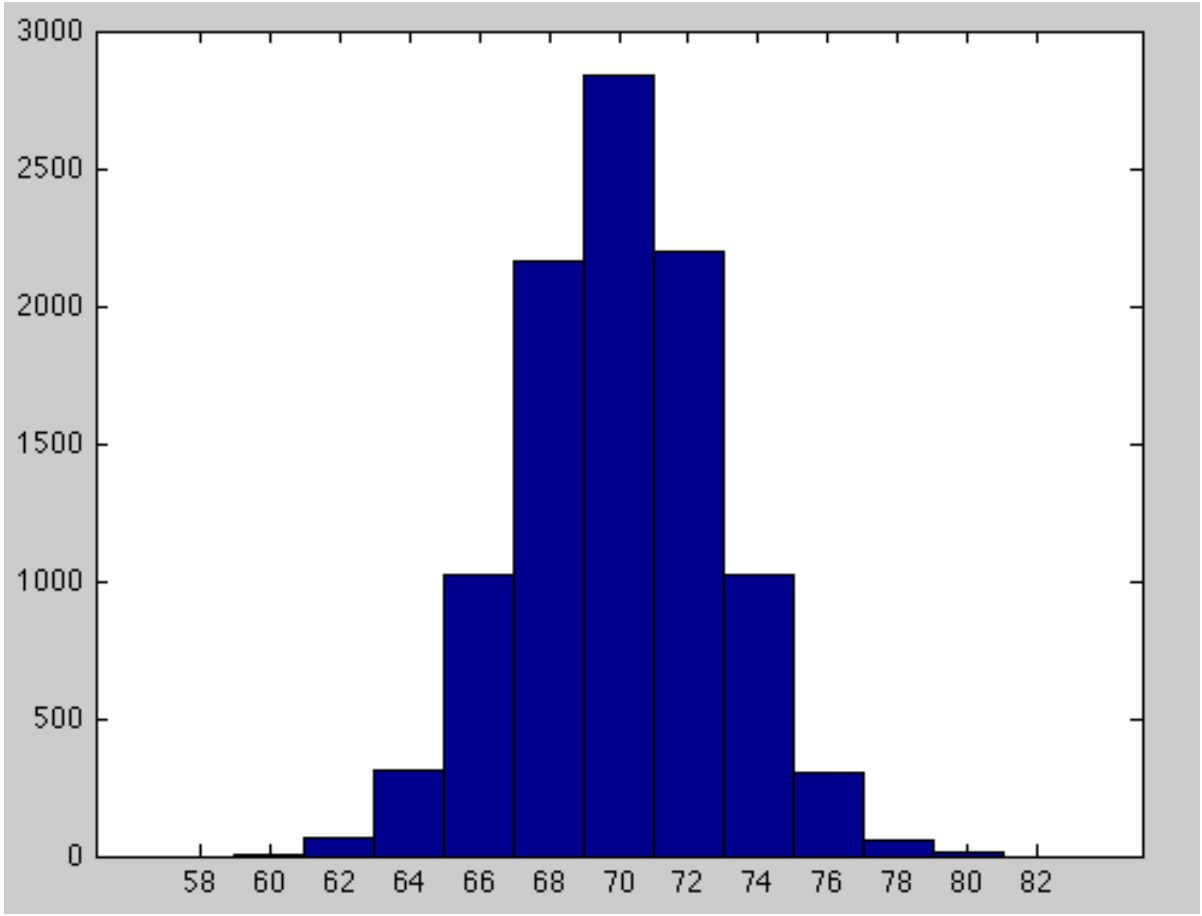
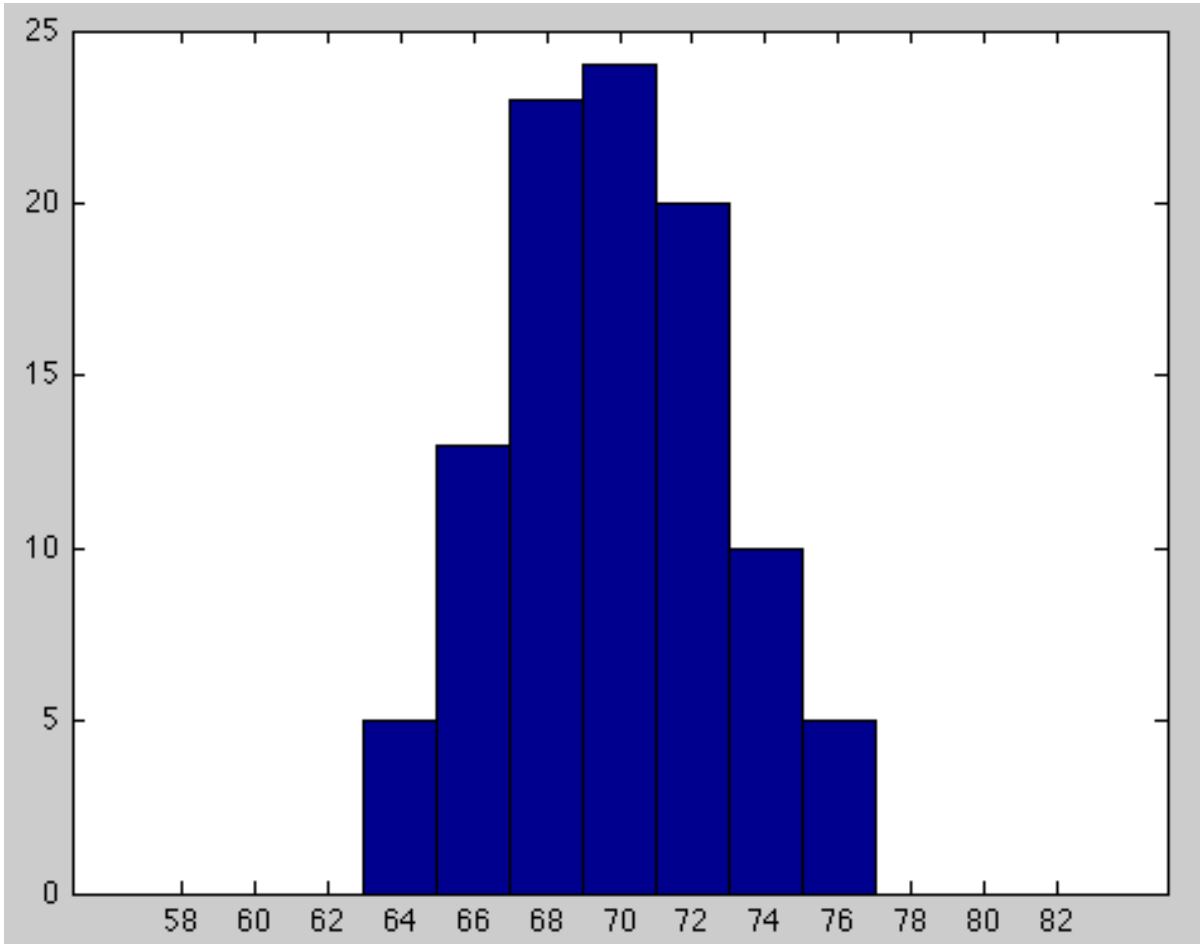


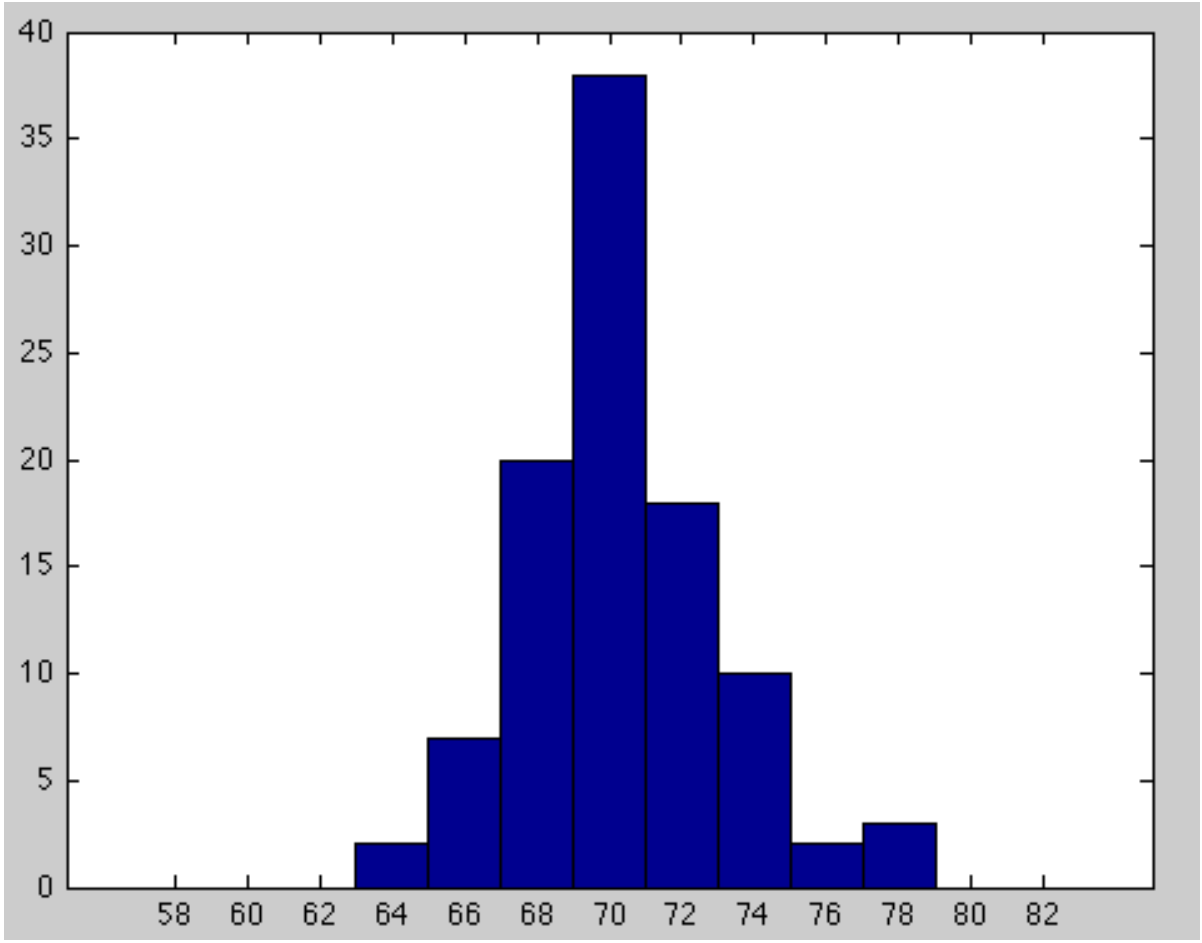
Data histogram for a population.

$$\textit{mean} = 70.003, \qquad \textit{SD} = 2.8032.$$

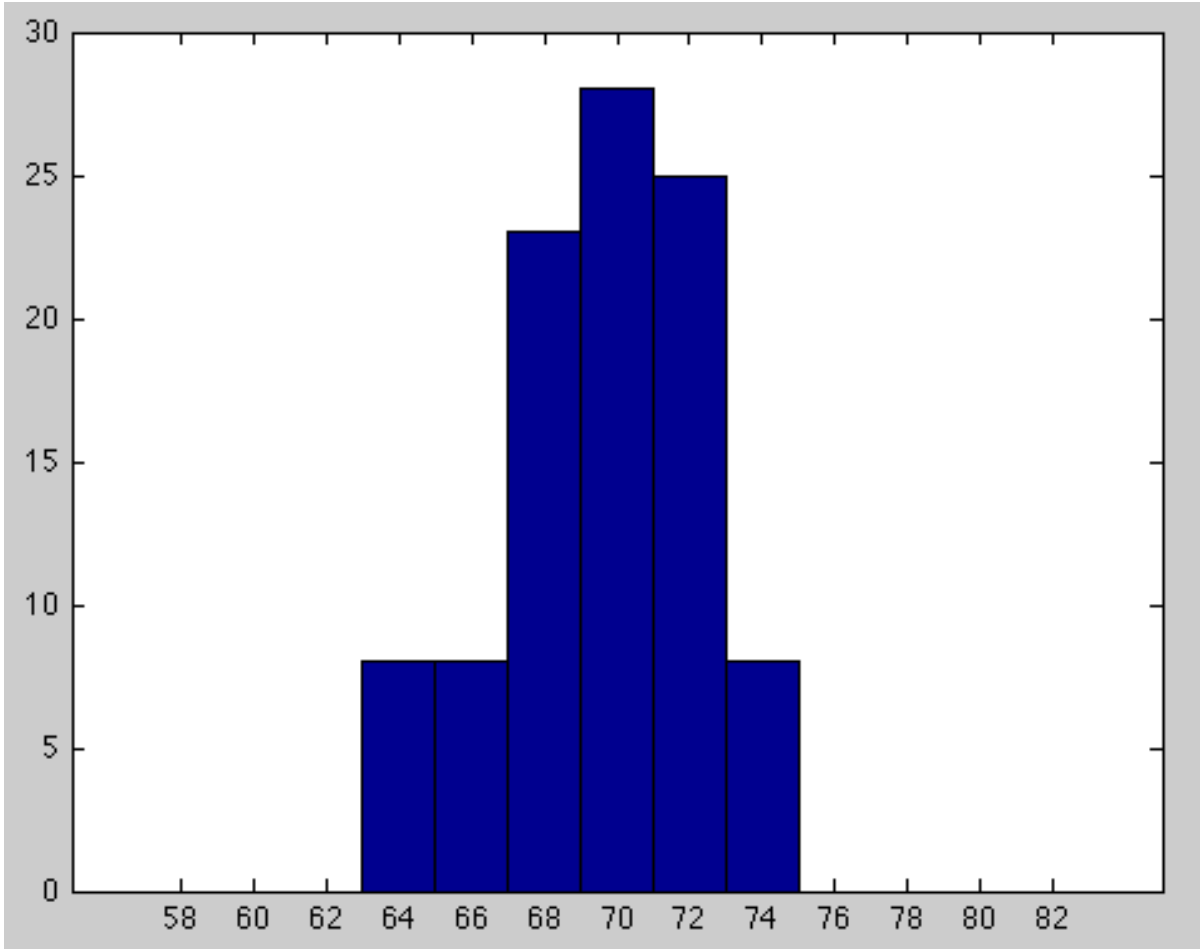
Data histograms for four simple random samples of size 100:



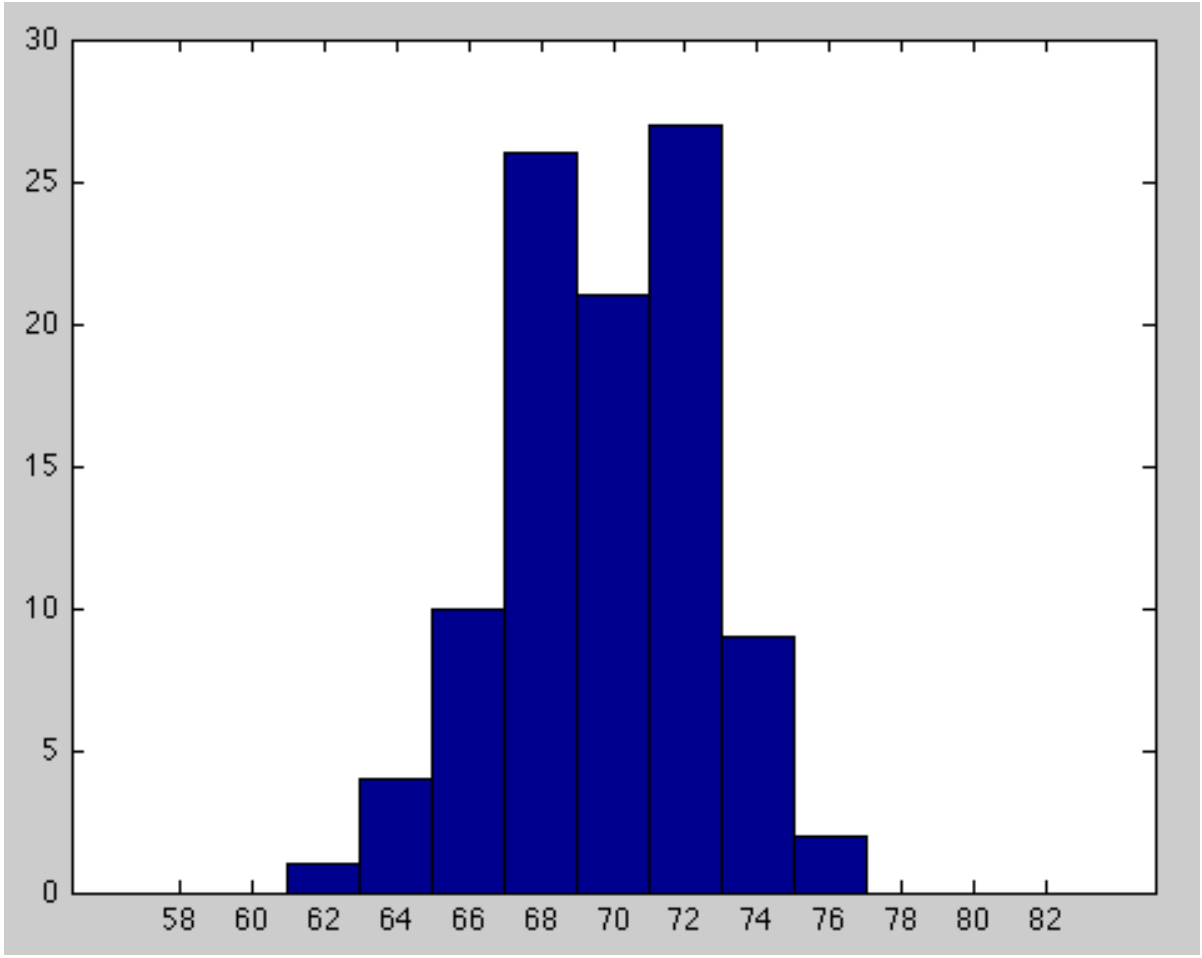
Sample 1: Mean $= 69.77$, SD ≈ 3.



Sample 2: Mean $= 70.22$, SD ≈ 2.75.

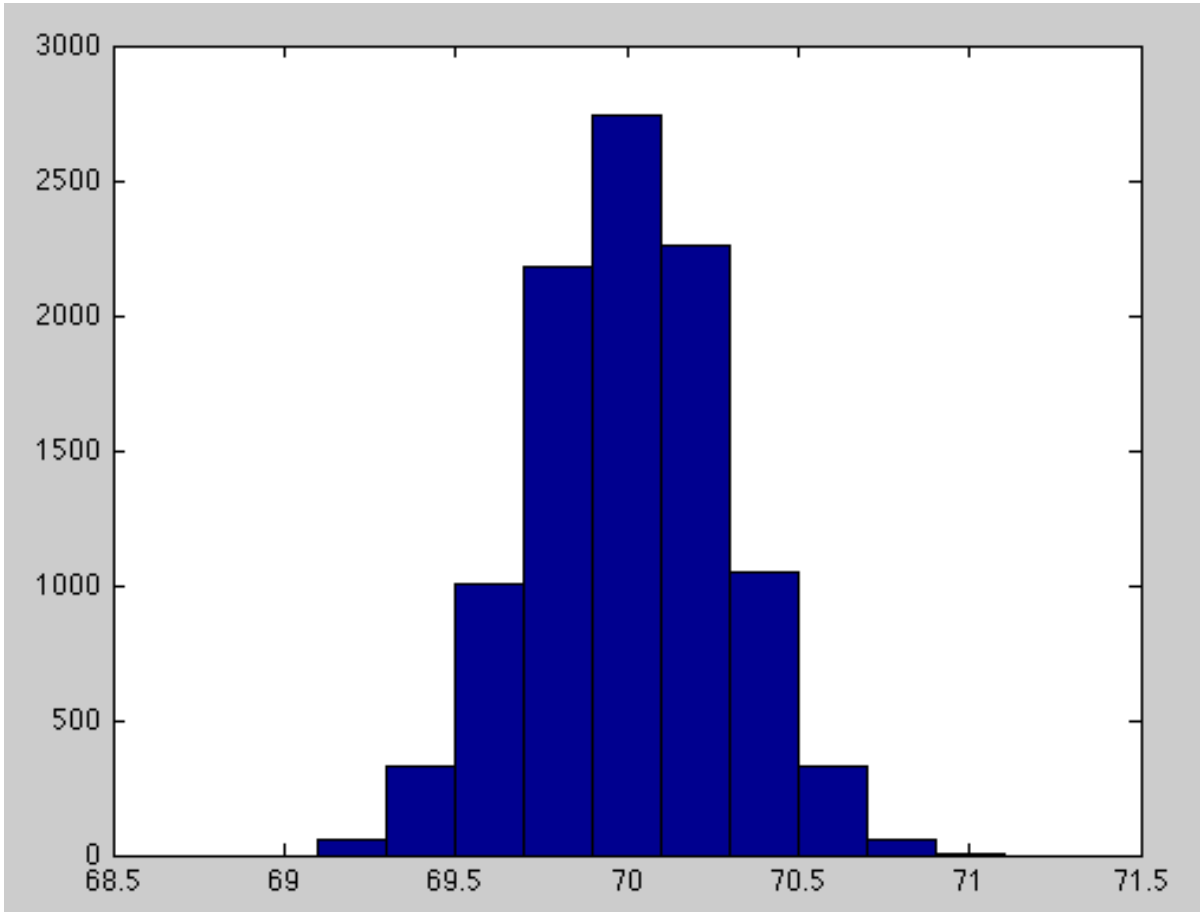


Sample 3: Mean $= 69.52$, SD ≈ 2.69.



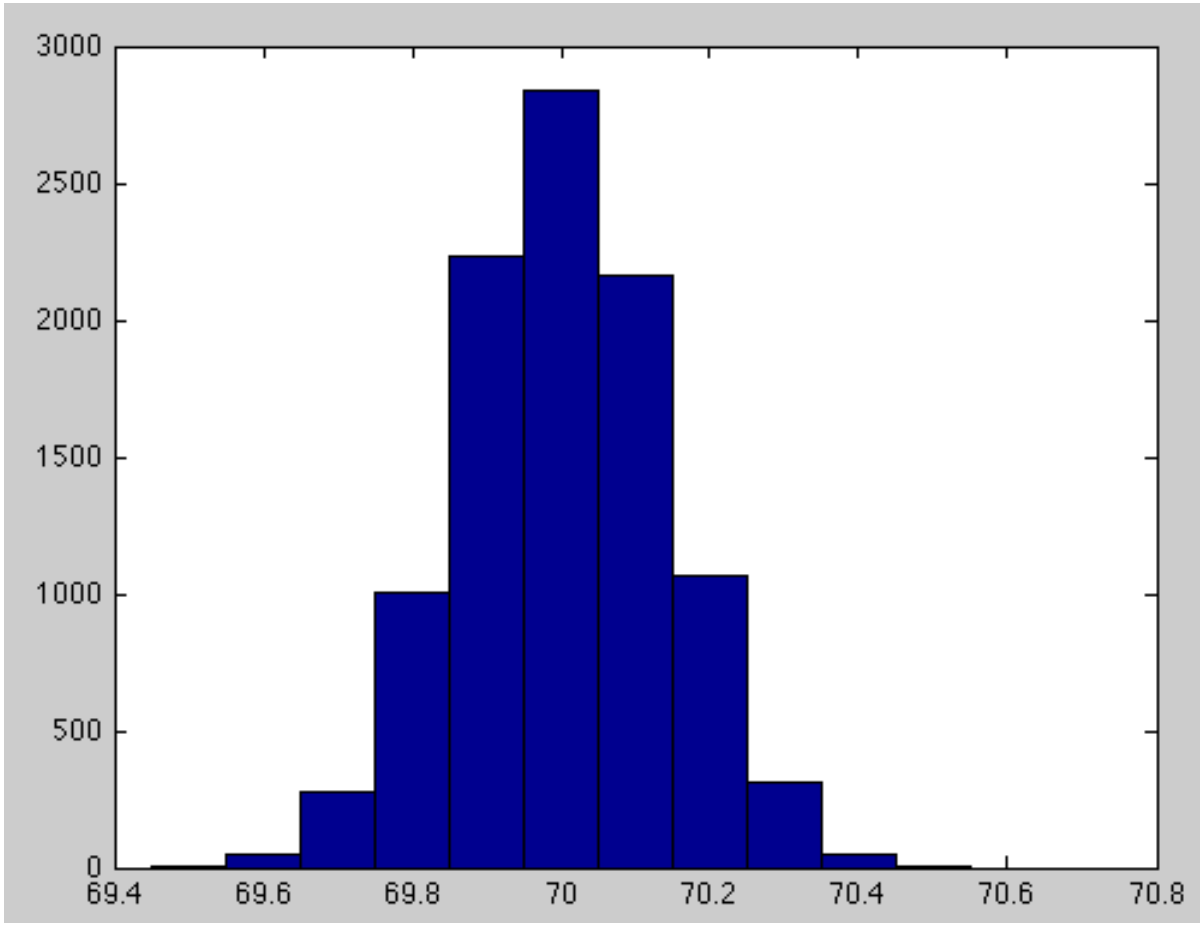
Sample 4: Mean $= 69.89$, SD ≈ 2.83.

Histogram for distribution of averages of 10,000 samples of size 100:



Mean= 70.0037, **SD**= 0.2797

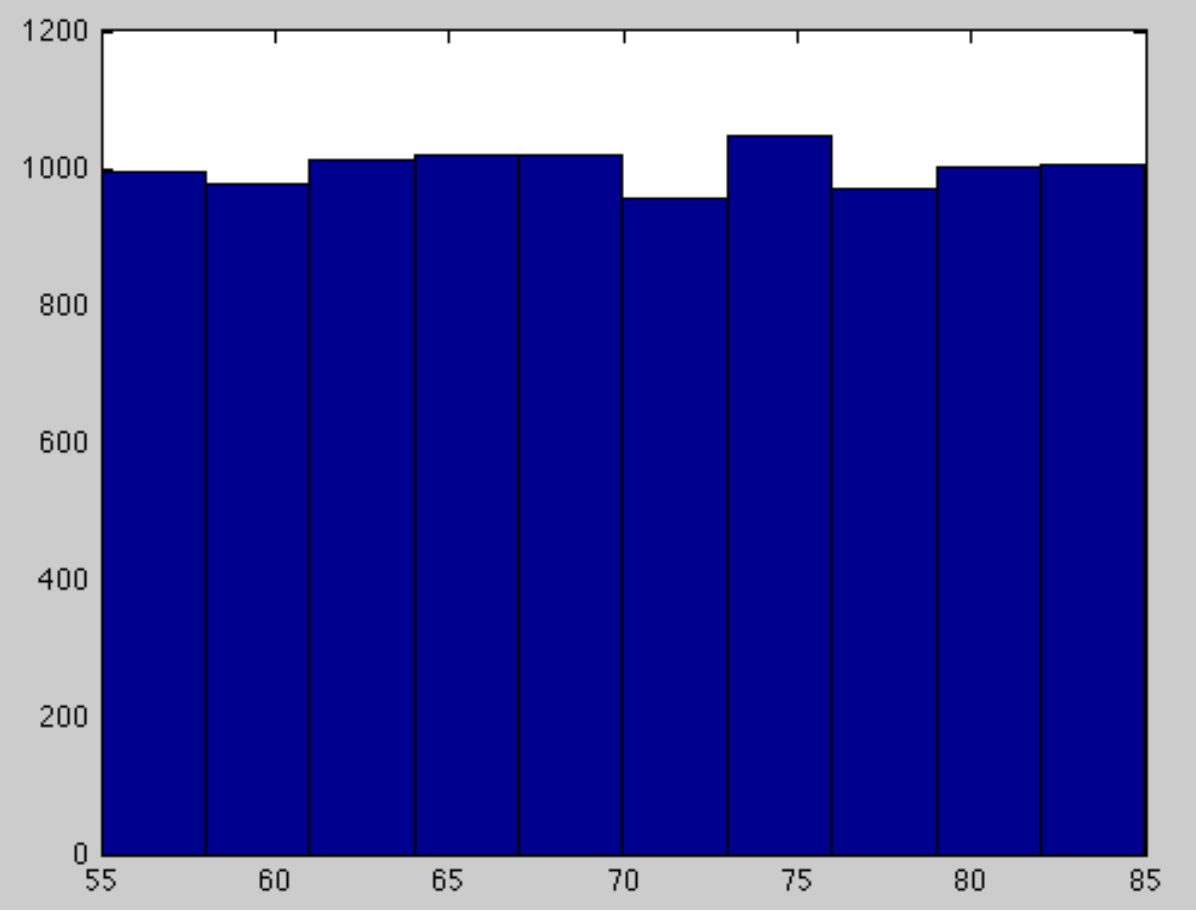
Histogram for distribution of averages of 10,000 samples of size 400:



Mean$= 70.0017$**, SD** $= 0.1376$

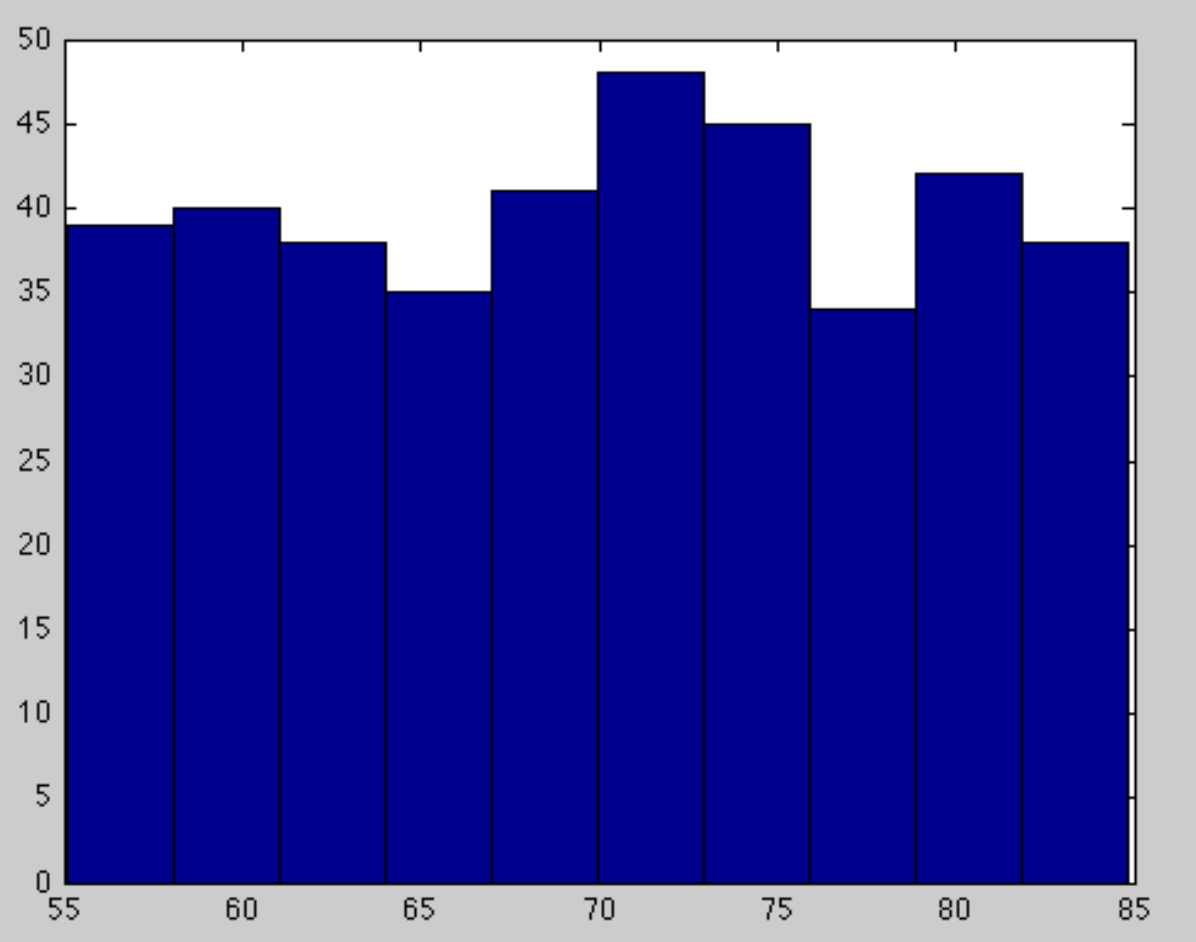
Example 2:

Data histogram for another population

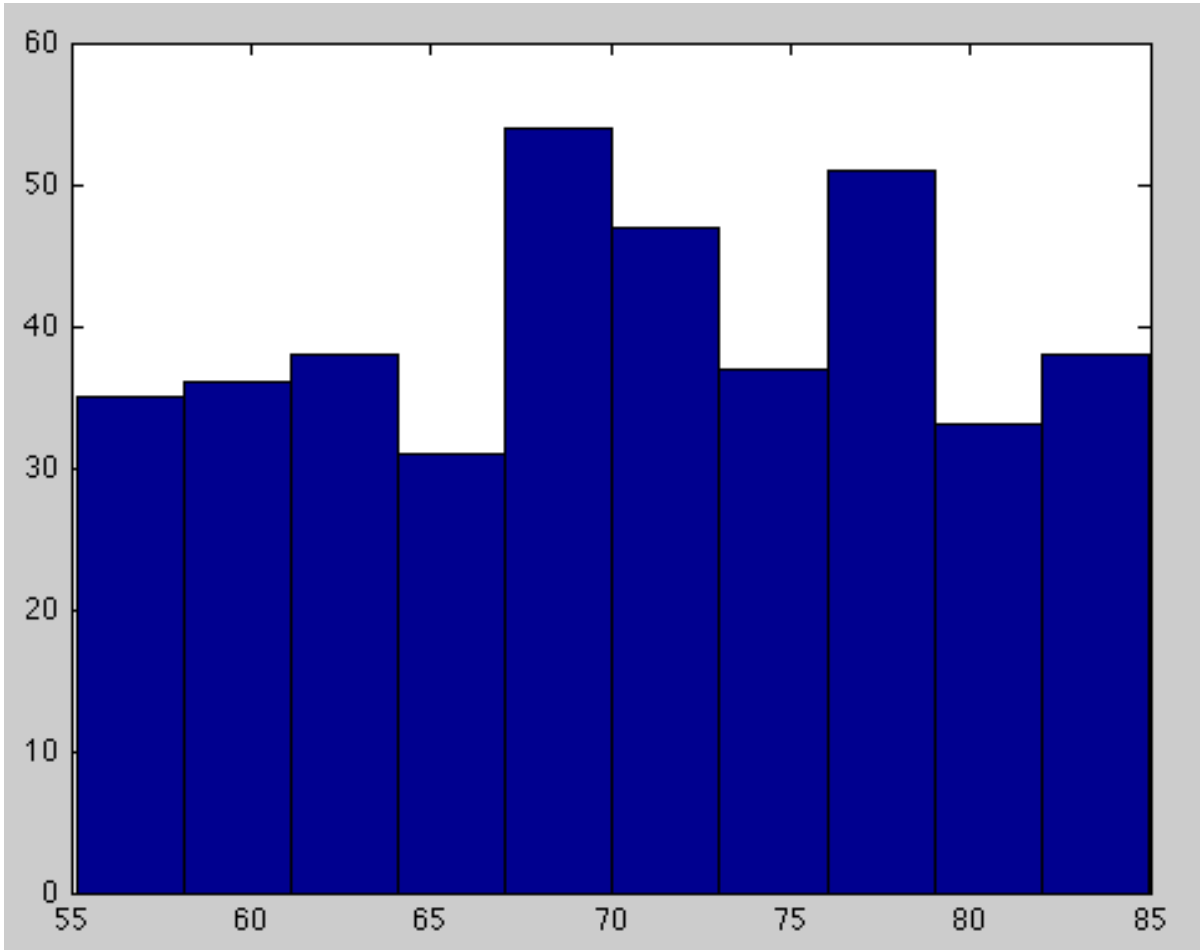


mean $= 70.046$, ***SD*** $= 8.657$ ***(why is the SD bigger?).***

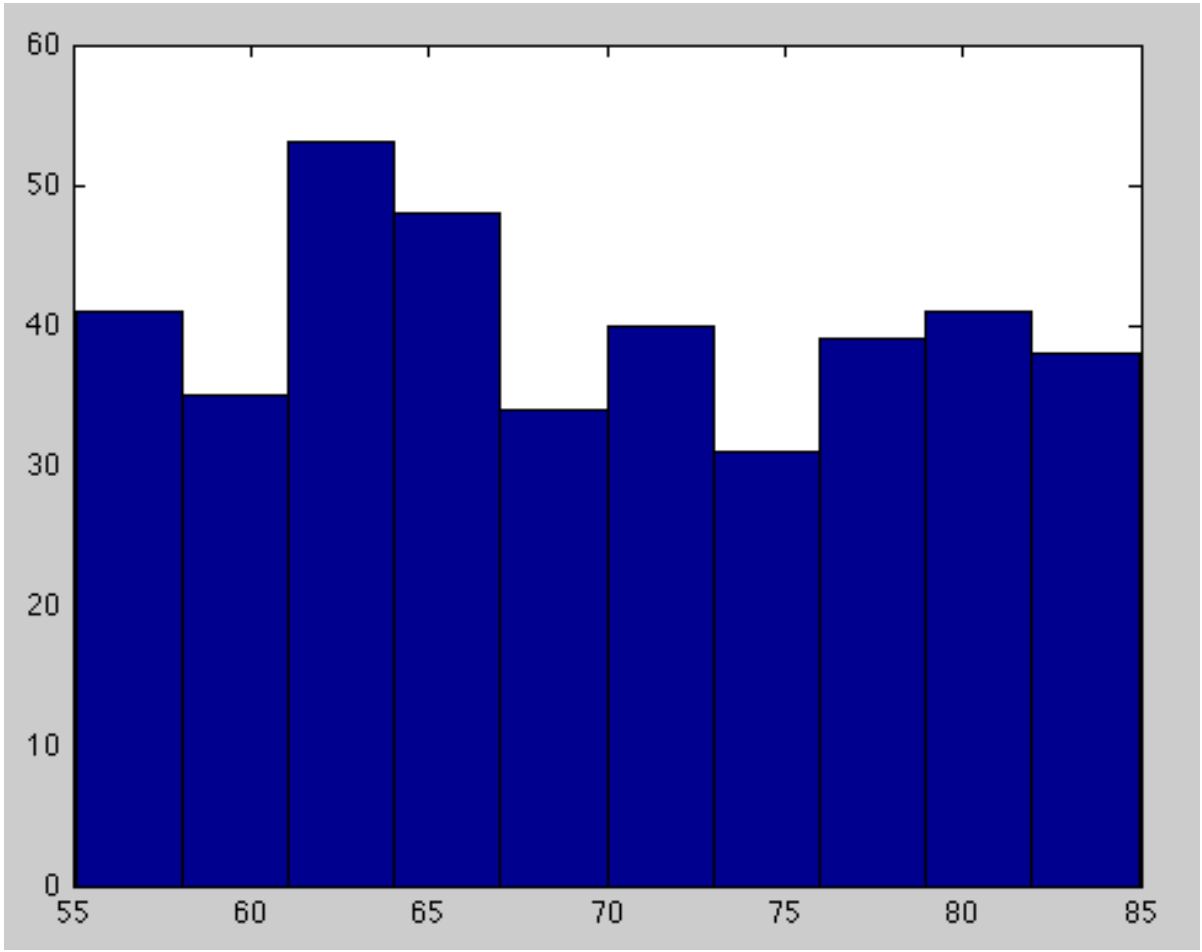
Data histograms for four simple random samples of size 400 taken from the uniform distribution above...



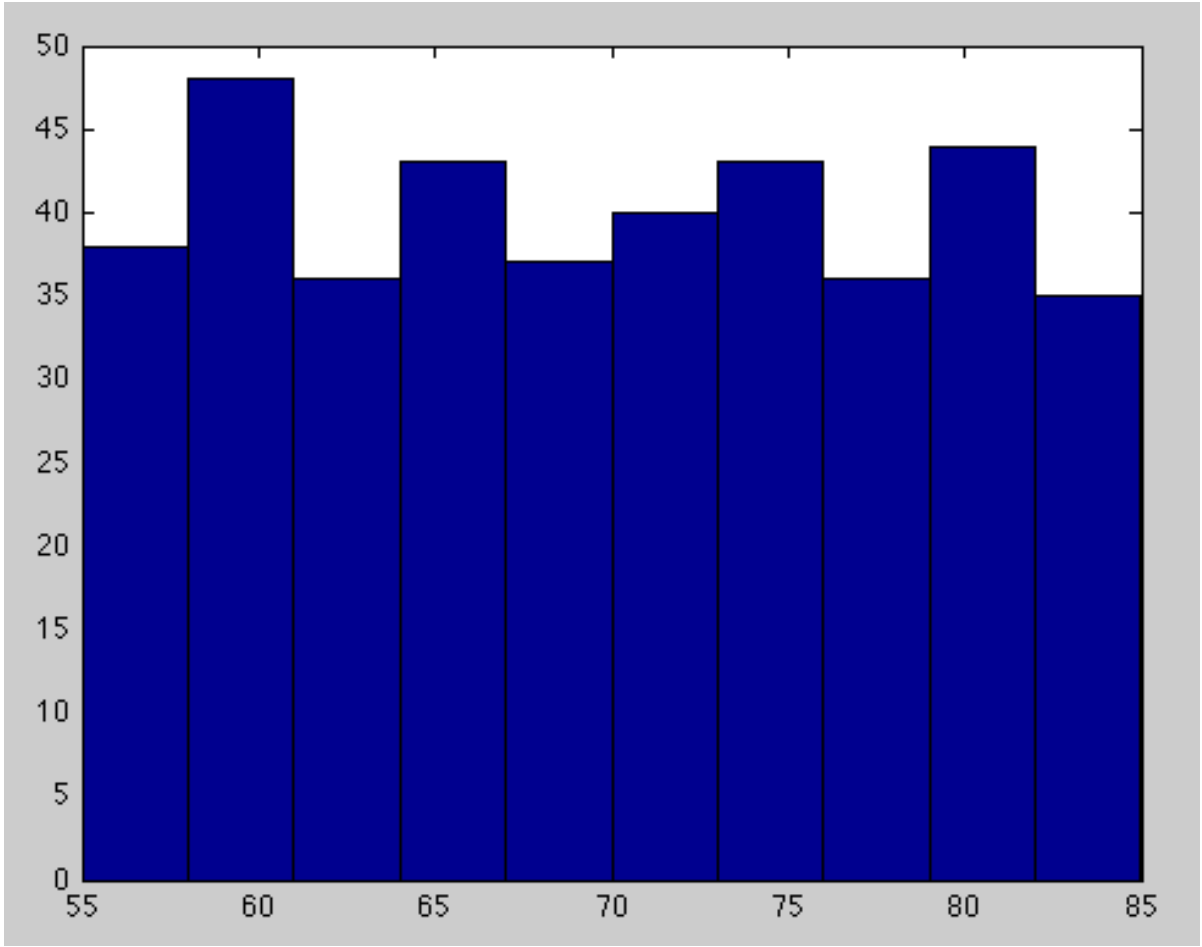
Sample 1: Mean = 70.72, SD $\approx$ 8.45



Sample 2: Mean = 70.67, SD $\approx$ 9.03

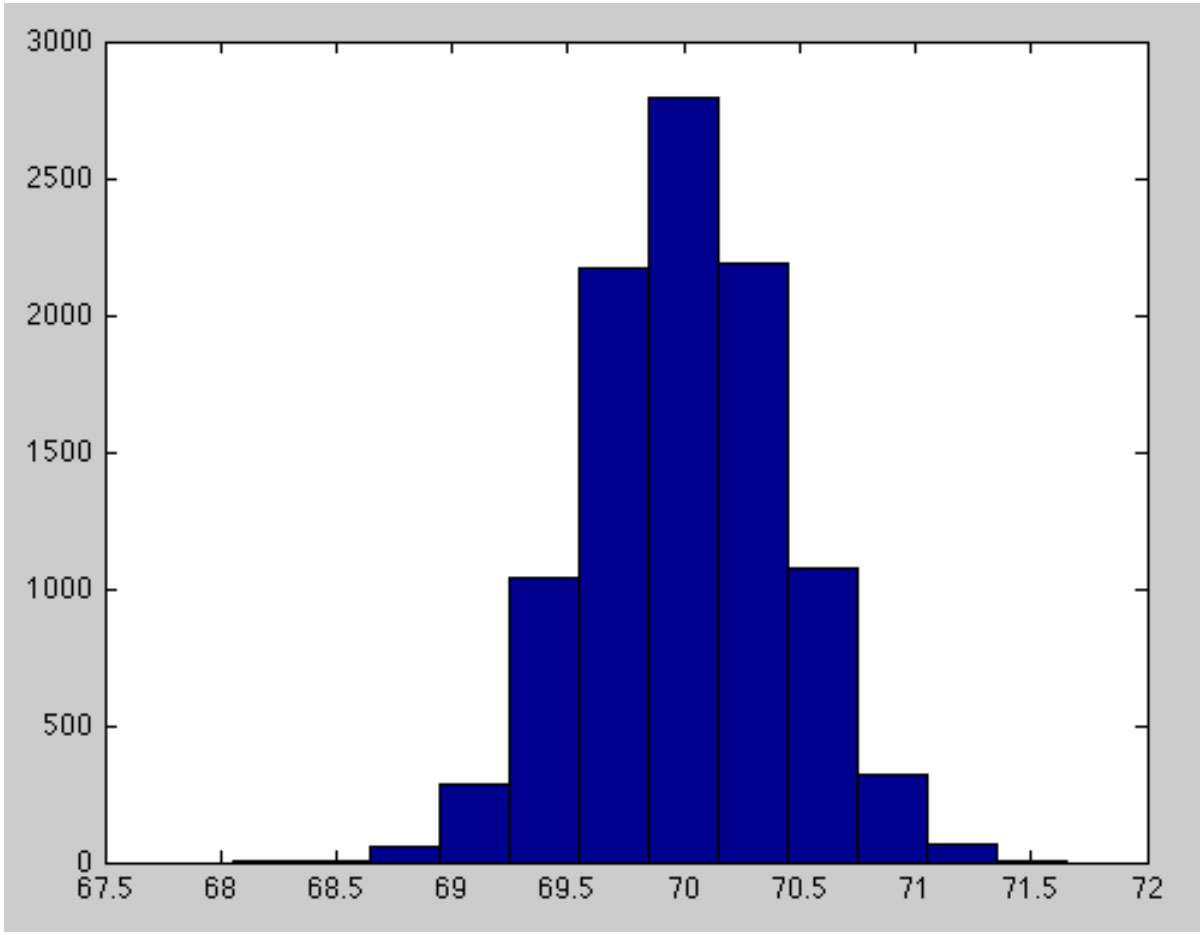


Sample 3: Mean = 69.32, SD $\approx$ 8.57



Sample 4: Mean = 70.11, SD $\approx$ 8.76

Histogram for distribution of averages of 10,000 samples of size 400 (from the uniform distribution above):



Mean $= 70.0056$**, SD**$= 0.4186$