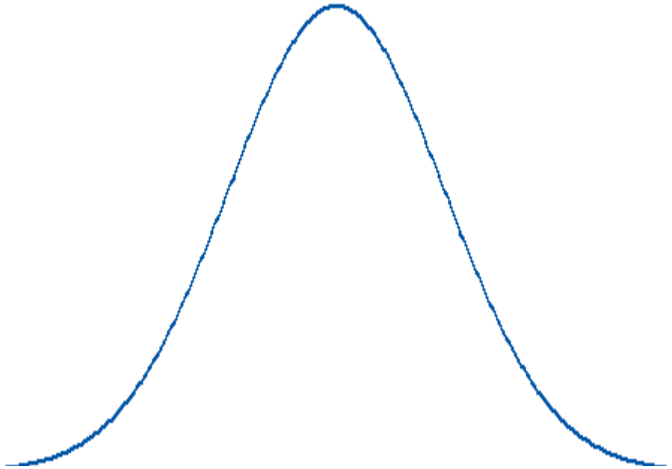
Sampling Distribution of a Statistic

Population Distribution



Samples without replacement

Sample 1 (of size n)

Sample 2 (of size n)

Sample 3 (of size n)

Sample 4 (of size n)

...

Sample m (of size n)

Compute the statistic on each sample

value 1

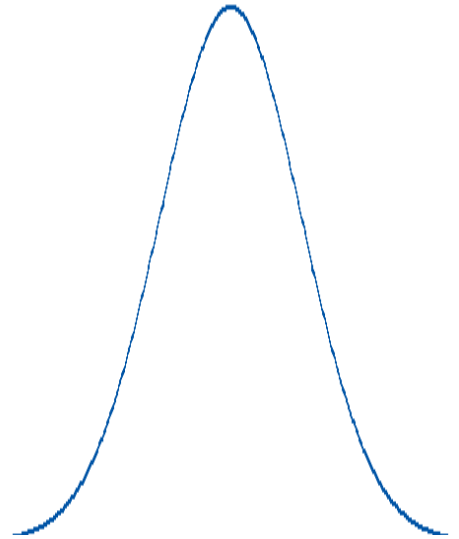
value 2

value 3

value 4

value m

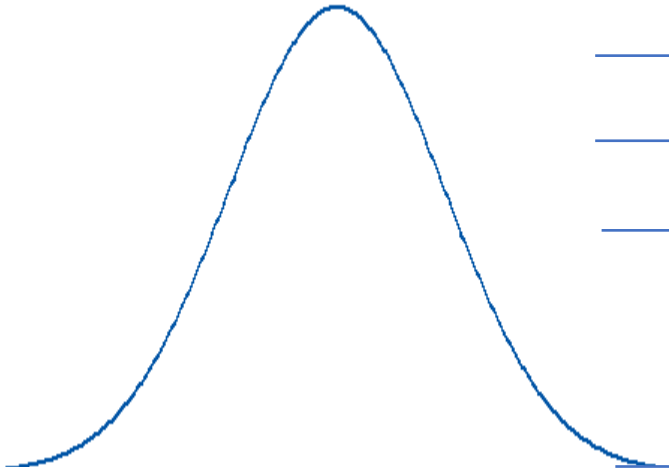
Sampling Distribution



Standard deviation of a sampling distribution is called the **standard error**.

Sampling Distribution of the Mean (n=5)

Population Distribution



[4, 5, 6, 7, 8] (of size 5)

[1, 2, 3, 4, 5](of size 5)

[4, 5, 6, 6, 7](of size 5)

[3, 4, 5, 5, 6](of size 5)

...

[1, 4, 8, 5, 6](of size 5)

Compute the mean on each sample

6

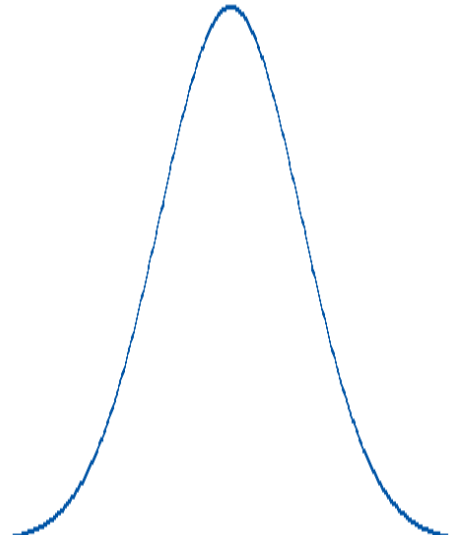
3

5.6

4.6

4.8

Sampling Distribution of the mean (n = 5)



Standard deviation of a sampling distribution is called the **standard error**.

Bootstrapping

Main goal estimate the standard error