Lecture 16: Sample Size and Power

Chapter 4.6

Two-Sided Alternative Hypothesis

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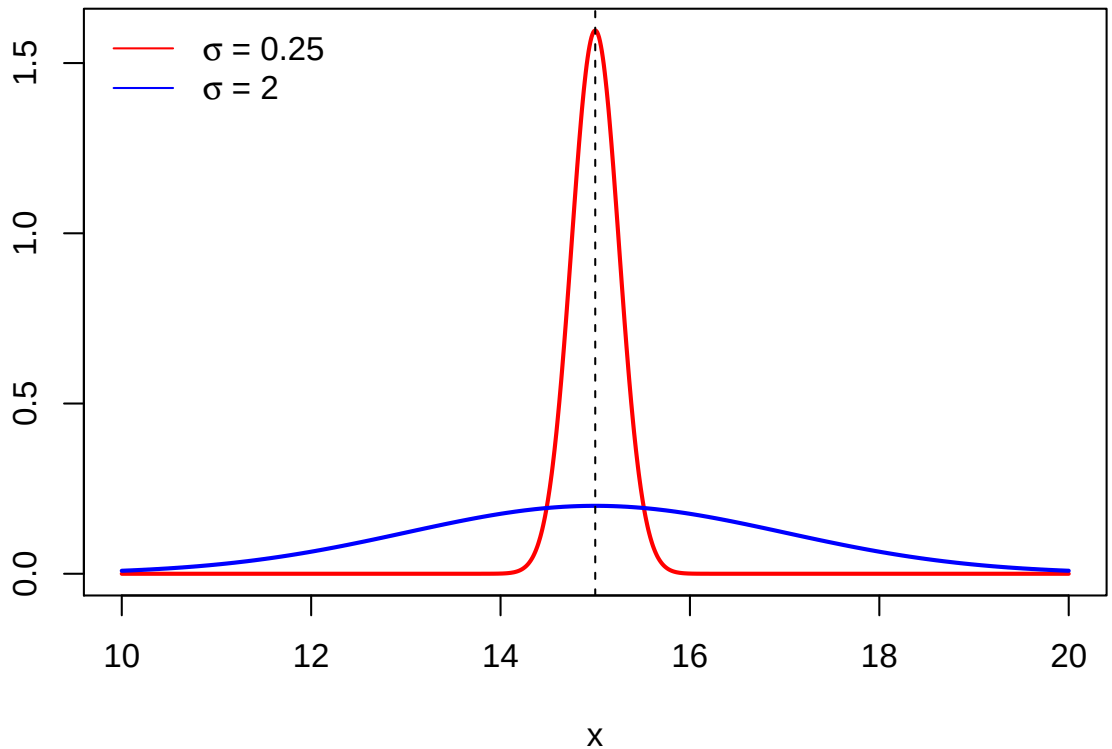
Ronald Fisher, the creator of p-values, never intended for them to be used this way: http://en.wikipedia.org/wiki/P-value#Criticisms

Sample Size: Thought Experiment

Say we have 2 population distributions with $\mu = 15$ but different σ:



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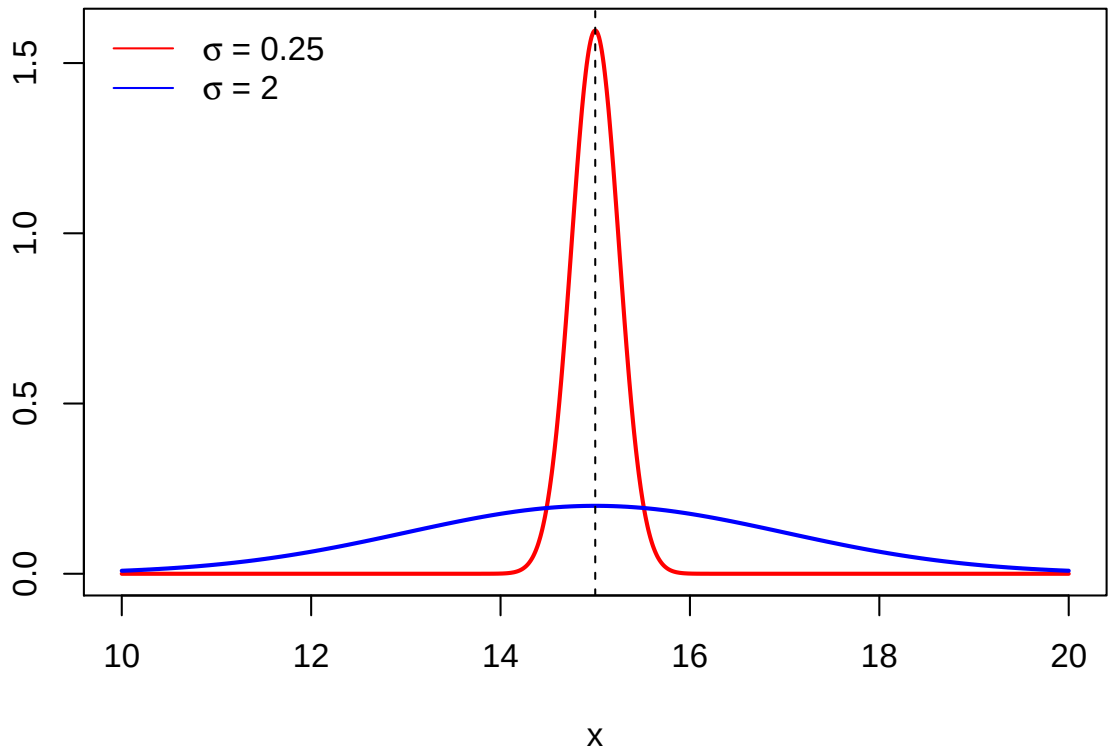
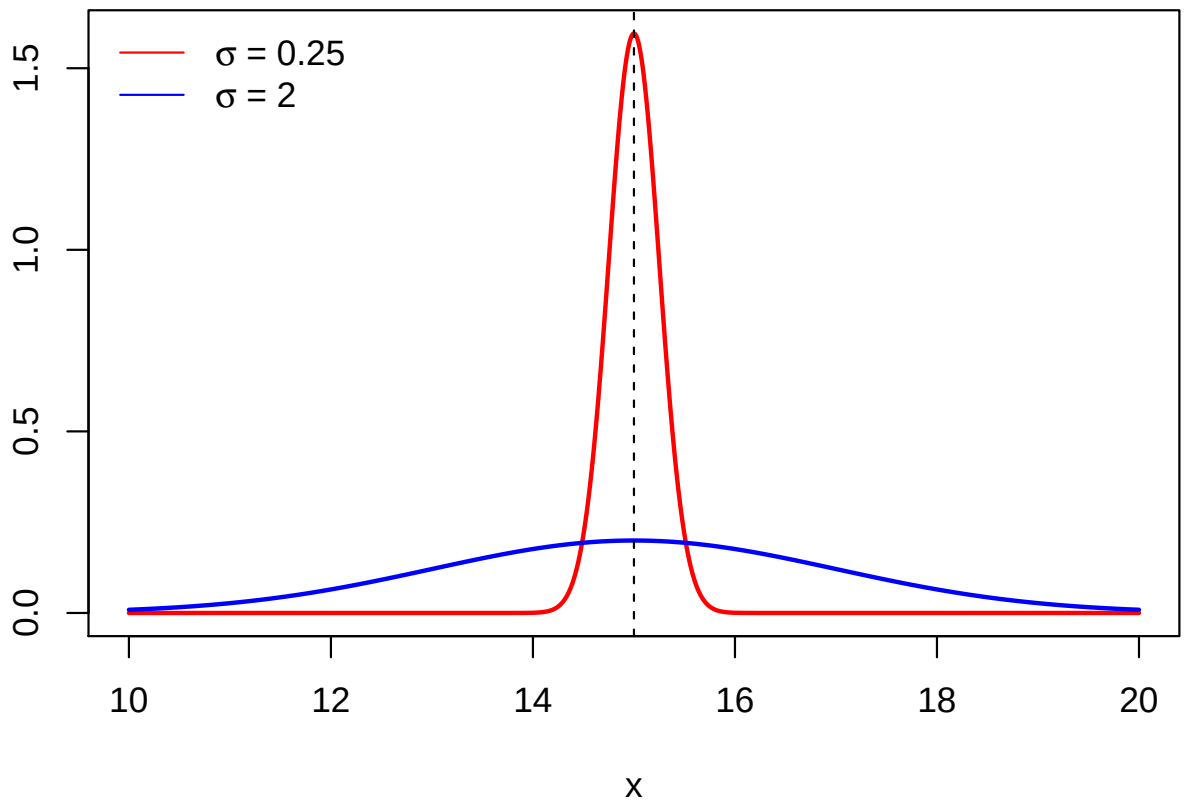


Which of the two distributions do you think will require a bigger n to estimate μ "well"?

Margin of Error

Back to Thought Experiment

For the same desired maximal margin of error m and same confidence level, we need a larger n to estimate the mean of the blue curve:



Type II Error Rate and Power