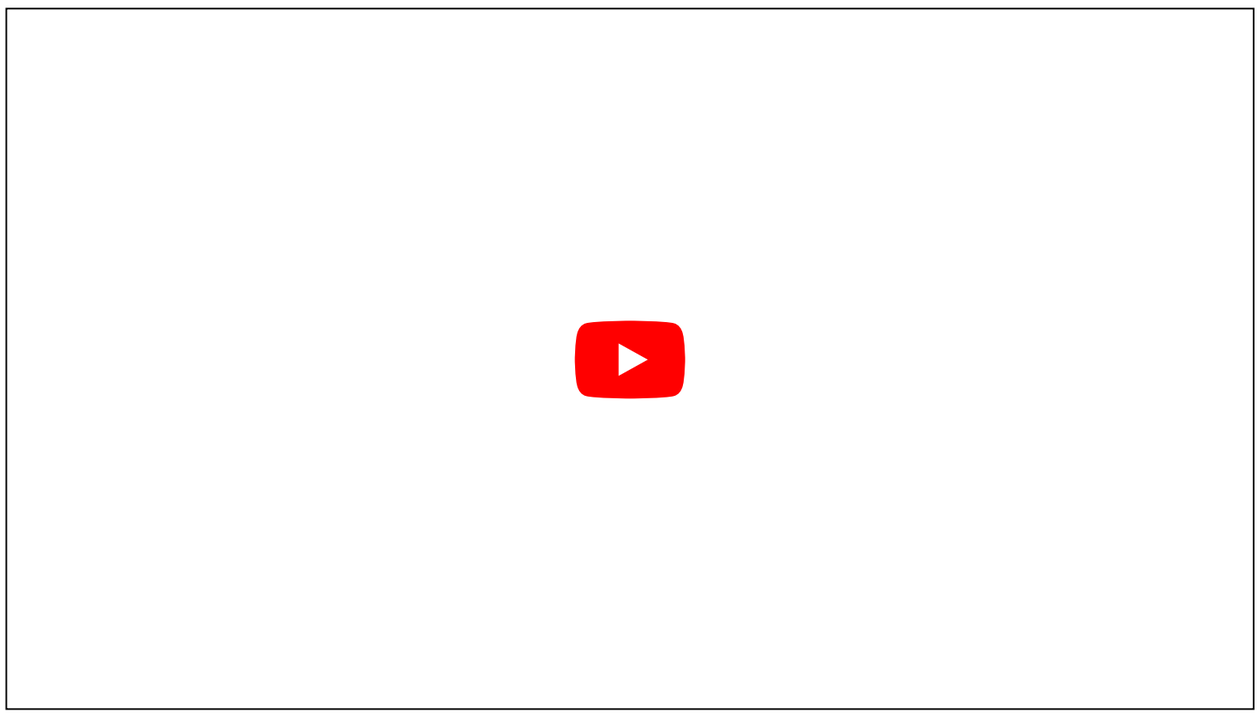
Gaussian Class



Resources for Review

The example in the next part of the lesson assumes you are familiar with Gaussian and binomial distributions.

Here are a few formulas that might be helpful:

Gaussian Distribution Formulas

probability density function

$$f(x \mid \mu, \sigma^2) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-} \frac{(x-\mu)^2}{2\sigma^2}$$

where:

μ is the mean

σ is the standard deviation

σ^2 is the variance

Binomial Distribution Formulas

mean

$$\mu = n * p$$

In other words, a fair coin has a probability of a positive outcome (heads) p = 0.5. If you flip a coin 20 times, the mean would be 20 * 0.5 = 10; you'd expect to get 10 heads.

variance

$$\sigma^2 = n * p * (1 - p)$$

Continuing with the coin example, n would be the number of coin tosses and p would be the probability of getting heads.

standard deviation

$$\sigma = \sqrt{n * p * (1 - p)}$$

or in other words, the standard deviation is the square root of the variance.

probability density function

$$f(k, n, p) = \frac{n!}{k!(n-k)!} p^k (1-p)^{(n-k)}$$

Further Resources

If you would like to review the Gaussian (normal) distribution and binomial distribution, here are a few resources:

This free Udacity course, Intro to Statistics, has a lesson on Gaussian distributions as well as the Binomial distribution.

This free course, Intro to Descriptive Statistics, also has a Gaussian distributions lesson.

Here are the wikipedia articles:

- Gaussian Distributions Wikipedia
- Binomial Distributions Wikipedia

Quizzes

Here are a few quizzes to help you determine how well you understand the Gaussian and binomial distributions. Even if you can't remember how to answer these types of questions, feel free to move on