All the Stuff You Need To Know

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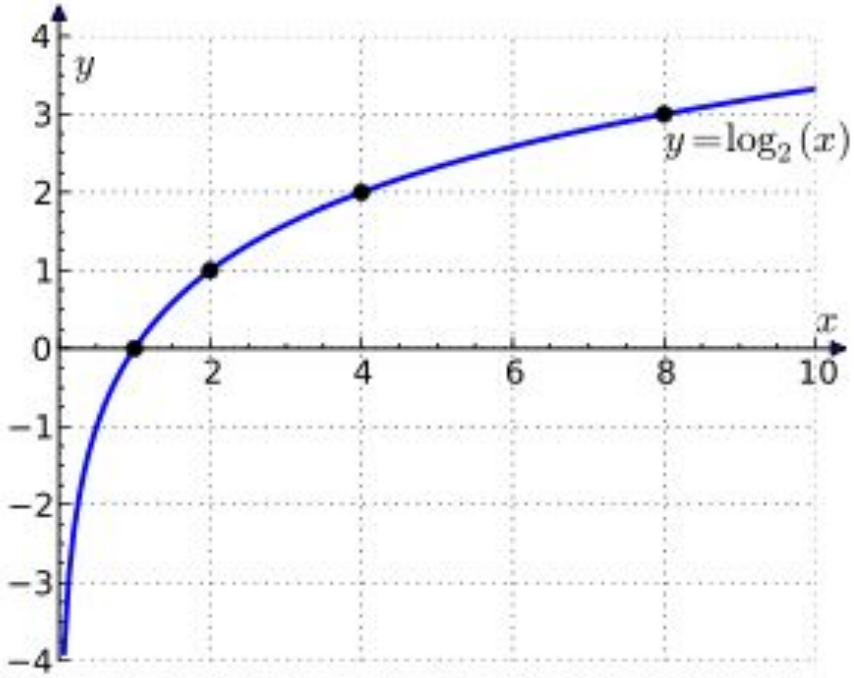
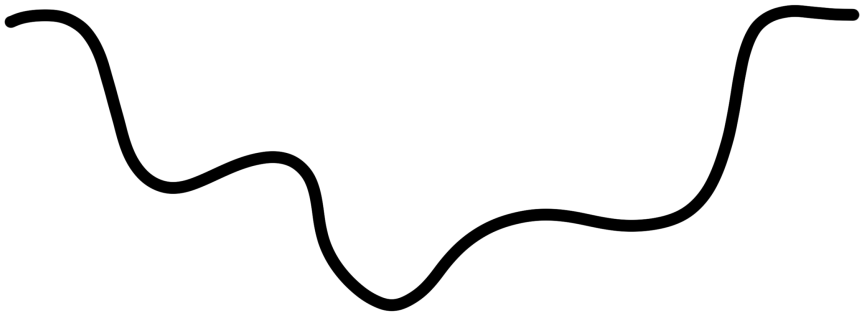
Welcome!
Everything is fine.

Logarithms

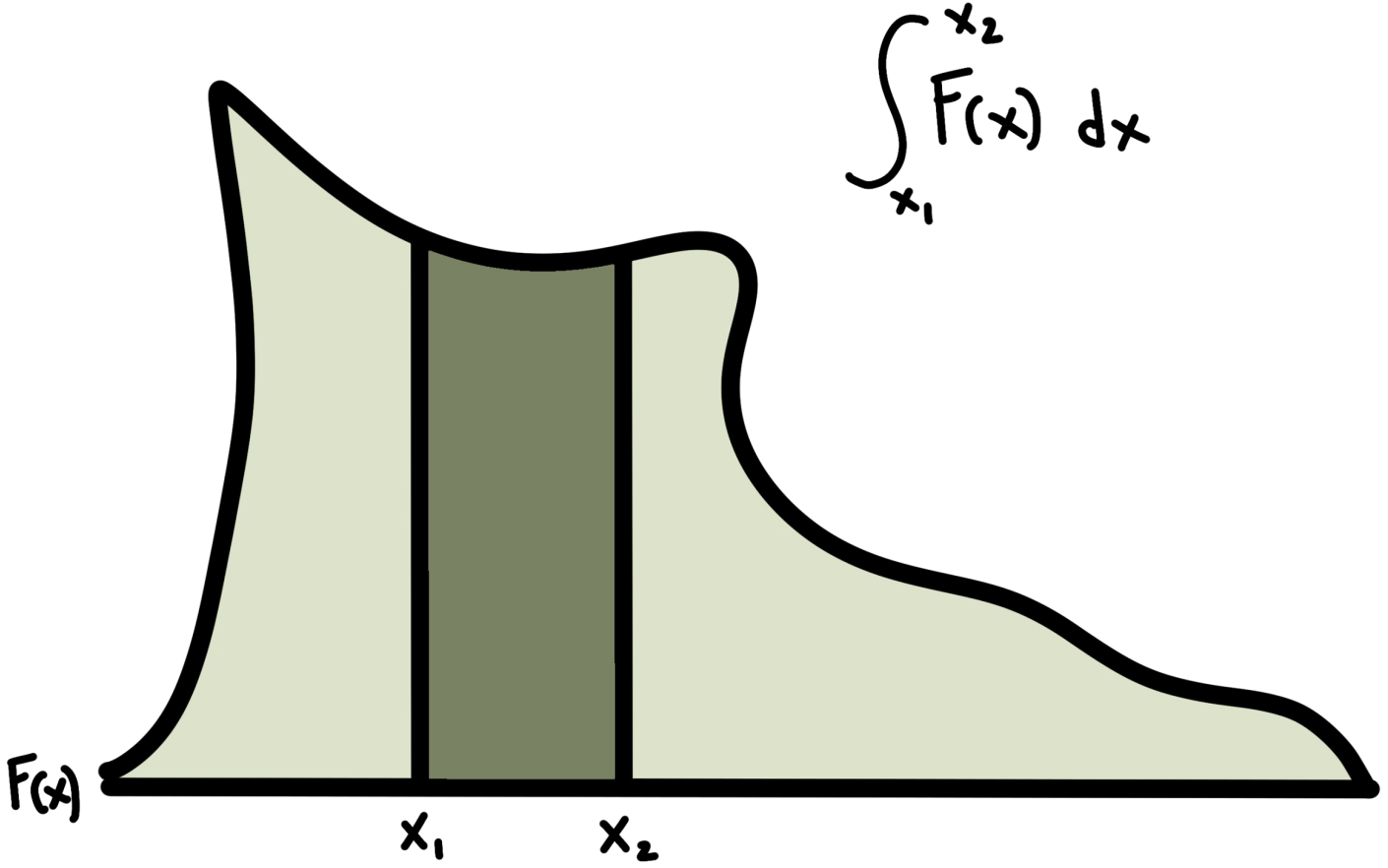
Log rules:



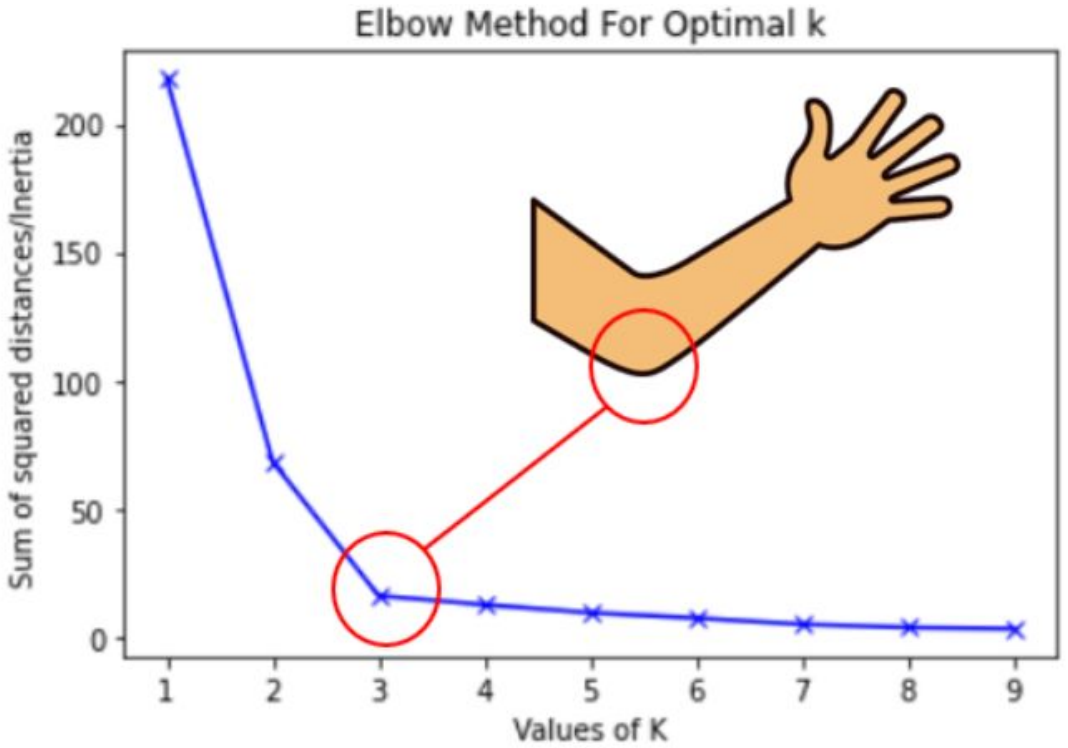
Derivatives



Integrals



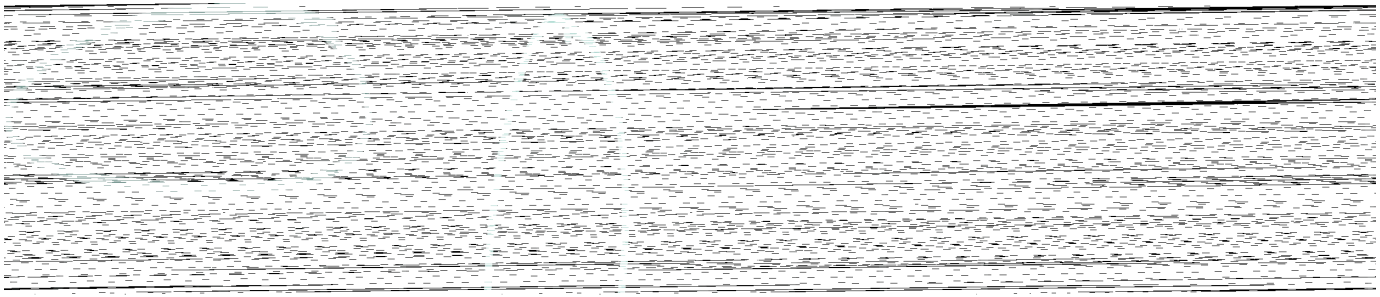
Elbow Method



Line plot between K and inertia

Matrices and Vectors

- Data as a Matrix/Vector (it’s just an excel spreadsheet)
- Matrix Algebra

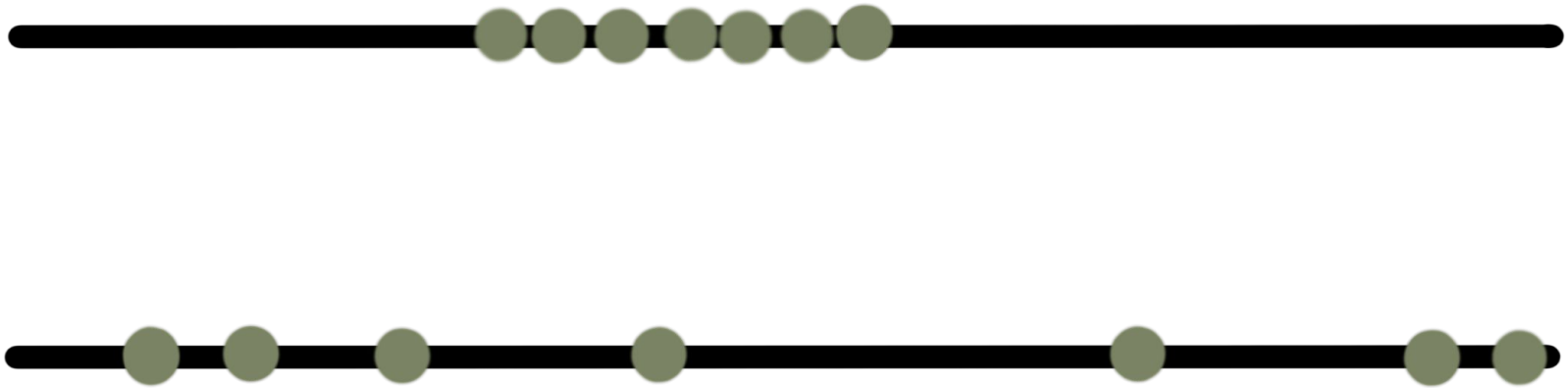


Eigendecomposition

Variance and Covariance

Which has higher variance?

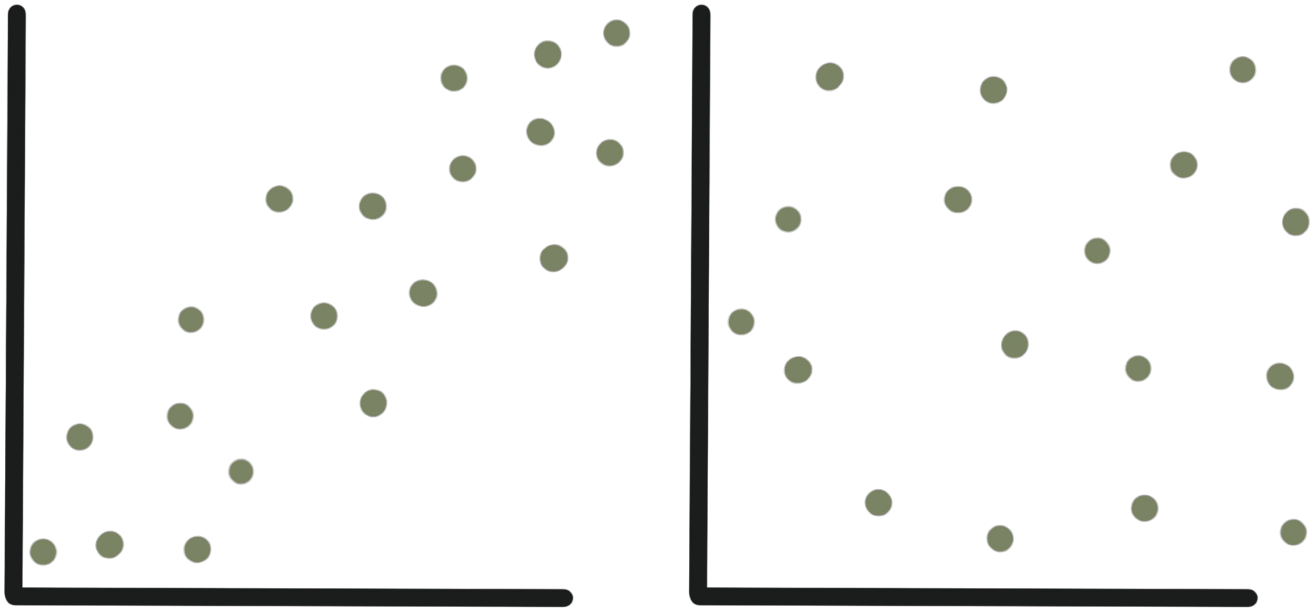
$$\frac{\Sigma(x_i - \mu)^2}{N}$$



Variance and Covariance

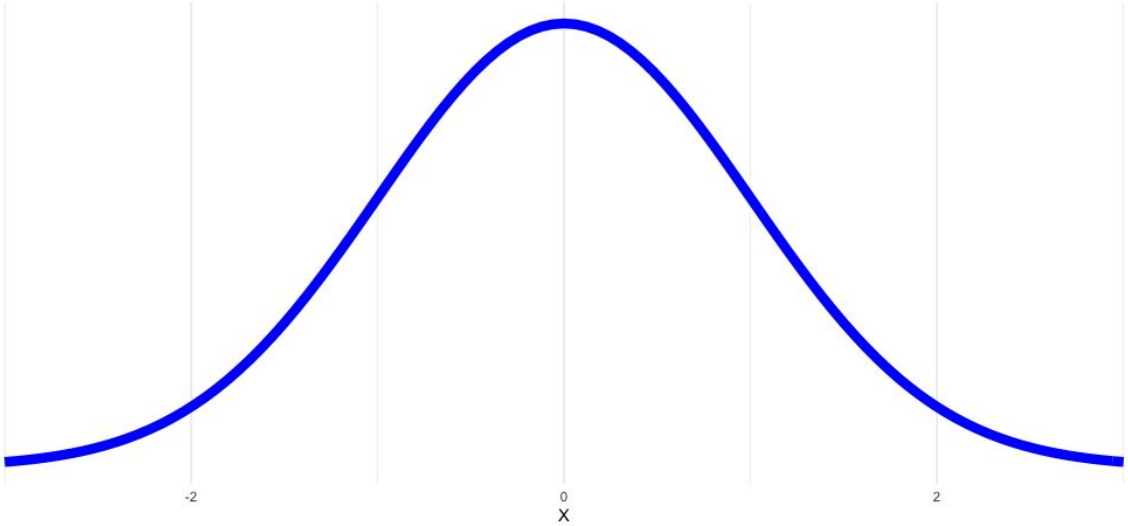
$$\frac{\Sigma(x_i - \mu_x)(y_i - \mu_y)}{N}$$

Which has higher covariance?



Normal Distribution

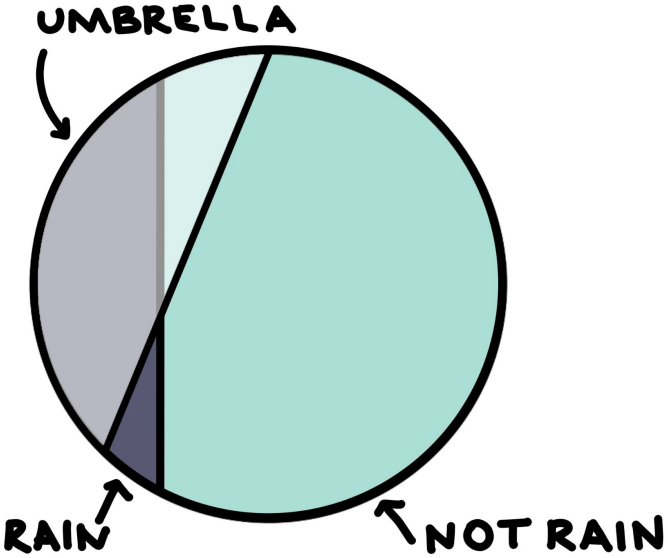
- Symmetric, Unimodal
- “Bell Curve”
- 68-95-99.7 rule
- CLT



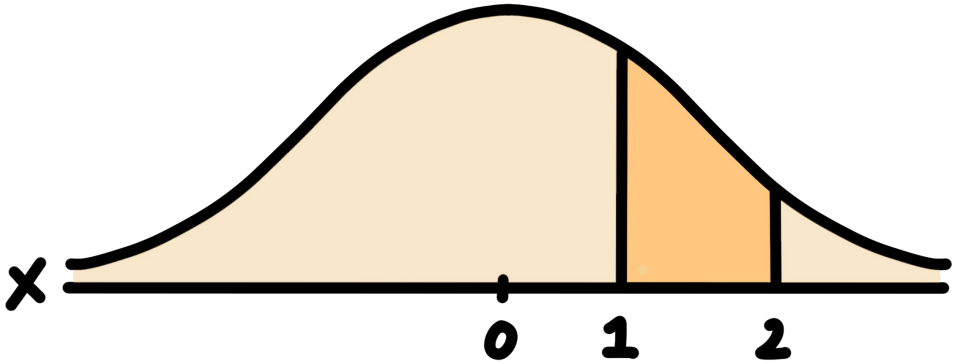
Data Types

- Continuous
- Categorical
  - Nominal
    - Dummy
  - Ordinal
  - Interval
- Boolean
- Text

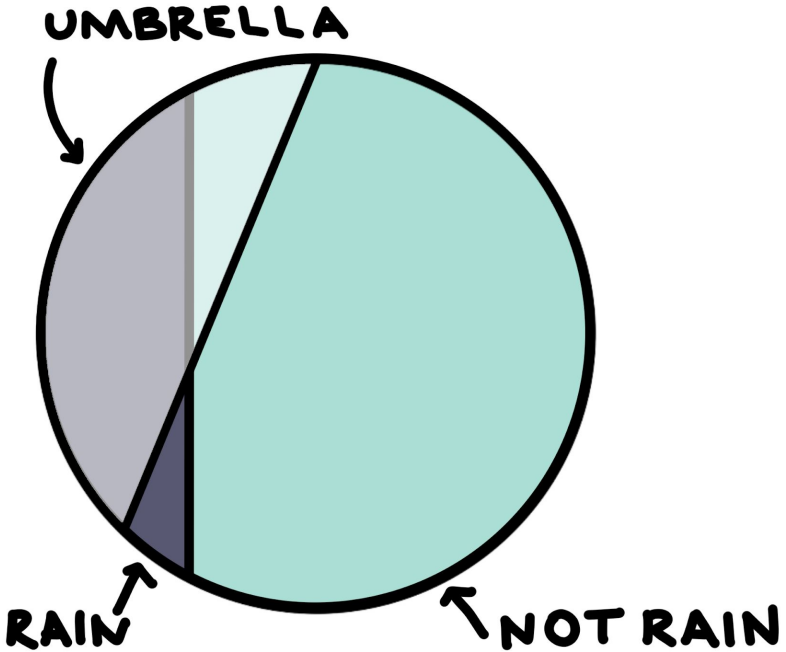
Probability



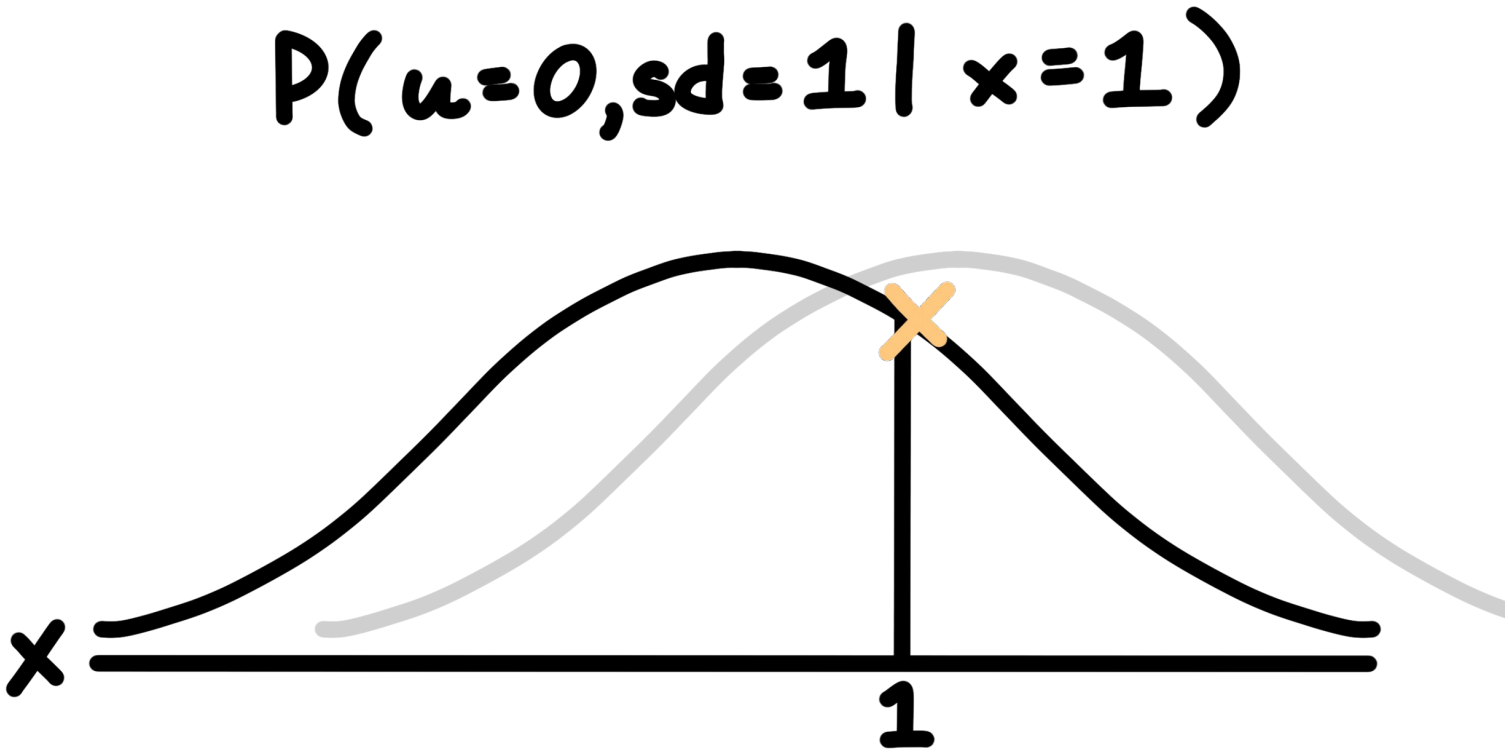
$$P(1 > x > 2 \mid u = 0, sd = 1)$$



Conditional Probability



Likelihood



Odds

Inference vs. Prediction