Sufficiency and minimal sufficiency

Where we are and where we're going

Recap: factorization theorem

Example

Suppose $X_1, \ldots, X_n \overset{iid}{\sim} N(\mu, \sigma^2)$ with μ and σ^2 unknown. Let $\theta = (\mu, \sigma^2)$.

Use the factorization theorem to find a sufficient statistic for θ. (The dimension of the statistic will be greater than 1).

Sufficient statistics as partitions

Minimal sufficient statistics