

Example

$$P(X|\theta) = \mathcal{N}(X|\theta, \sigma^2)$$

$$\mathcal{A}(v) = ?$$

$$\mathcal{A}(v') \rightarrow P(\theta|X) = \frac{\mathcal{N}(X|\theta, \sigma^2) P(\theta)}{P(X)}$$

Diagram illustrating the components of the posterior probability $P(\theta|X)$:

- $\mathcal{N}(X|\theta, \sigma^2)$ (Likelihood) and $P(\theta)$ (Prior) are combined in the numerator.
- $P(X)$ (Evidence) is in the denominator.
- $\mathcal{A}(v')$ is associated with the posterior $P(\theta|X)$.

