

The diagram illustrates the components of the Bayesian formula. The word "posterior" is positioned above the term $\pi(\theta|y)$, with a horizontal line and a downward arrow pointing to it. The word "likelihood" is positioned above the term $\pi(y|\theta)$, with a horizontal line and a downward arrow pointing to it. The word "prior" is positioned above the term $\pi(\theta)$, with a horizontal line and a downward arrow pointing to it. The word "marginal likelihood" is positioned below the integral term $\int \pi(y|\theta)\pi(\theta)d\theta$, with a horizontal line and an upward arrow pointing to it.

$$\text{posterior} \quad \pi(\theta|y) = \frac{\pi(y, \theta)}{\pi(y)} = \frac{\text{likelihood} \quad \pi(y|\theta) \quad \text{prior} \quad \pi(\theta)}{\int \pi(y|\theta)\pi(\theta)d\theta}$$

marginal likelihood