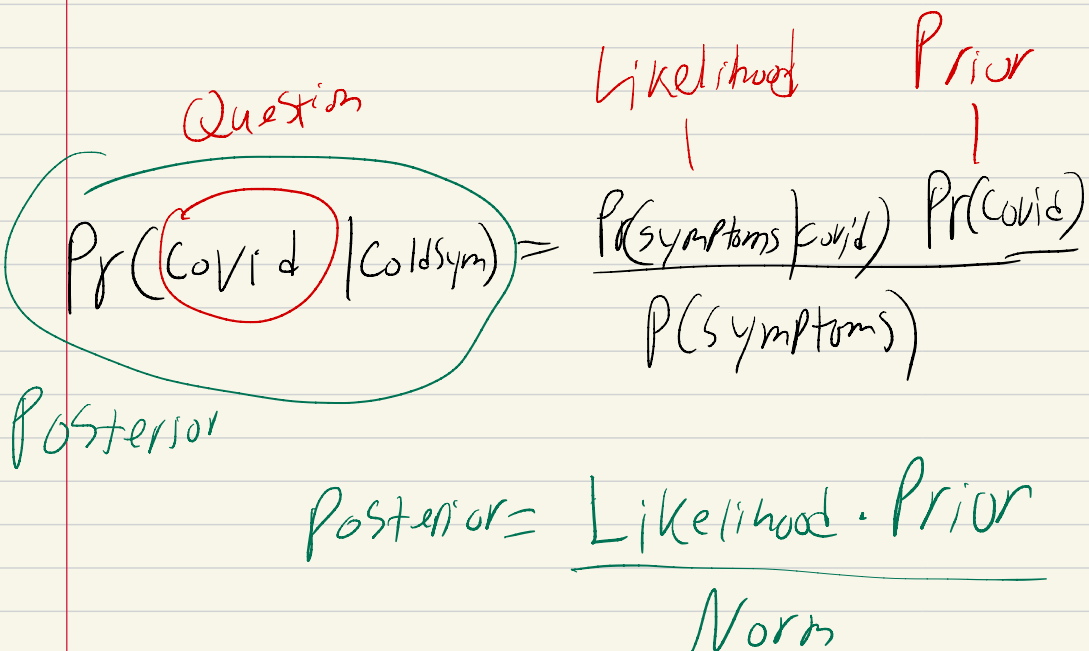
January 11: Bayesian Updating



$$\text{Posterior} = \frac{\text{Likelihood} \cdot \text{Prior}}{\text{Norm}}$$

Globe tossing

$$\text{Posterior}(p_W \mid d) = \frac{\text{Likelihood}(d \mid p_W) \quad \text{Prior}(p_W)}{\text{Norm}(d)}$$

For one toss at a time this is

$$\text{Posterior}(p_W \mid d) = \frac{\left((\text{data} = W) \cdot p_W + (\text{data} = L)(1 - p_W)\right) \text{Prior}(p_W)}{\text{Norm}(d)}$$

Correction for Jan 6

$$Pr(covid/RN) = \frac{Pr(covid)\left(Pr(cold)\cdot 1 + (1 - Pr(cold))\cdot Pr(RN/covid)\right)}{Pr(covid)\left(Pr(cold)\cdot 1 + (1 - Pr(cold))\cdot Pr(RN/covid)\right) + Pr(cold)(1 - Pr(covid))}$$