Apply Bayes' Theorem Again to Break Apart

Let's **use ≈ to denote proportionality**
and **focus on red (R)** for now:

$$prob(R|N \text{ AND } I \text{ AND } F) \approx$$
$$prob(R \text{ AND } N \text{ AND } I \text{ AND } F)$$

We can apply Bayes' Theorem
again on the right:

$$\approx prob(N \text{ AND } I \text{ AND } F \mid R) \times prob(R)$$