

$$\begin{aligned}
 P(T_{\text{FP}}|T_{\text{new}}) &= \frac{P(T_{\text{new}}|T_{\text{FP}})P(T_{\text{FP}})}{P(T_{\text{new}}|T_{\text{FP}})P(T_{\text{FP}}) + P(T_{\text{new}}|T_{\text{NFP}})P(T_{\text{NFP}})} \\
 &= \frac{\frac{3}{8} \times \frac{1}{2}}{\frac{3}{8} \times \frac{1}{2} + \frac{1}{8} \times \frac{1}{2}} \\
 &= 0.75
 \end{aligned}$$