5.

(a) $P(H \mid W=\text{Good}, S=\text{Pass}, N=\text{Out}) = \dfrac{P(W=\text{Good}, S=\text{Pass}, N=\text{Out} \mid H) \cdot P(H)}{P(W=\text{Good}, S=\text{Pass}, N=\text{Out})}$

$= \dfrac{P(W=\text{Good} \mid H) \cdot P(S=\text{Pass} \mid H) \cdot P(N=\text{Out} \mid H) \cdot P(H)}{P(W=\text{Good}) \cdot P(S=\text{Pass}) \cdot P(N=\text{Out})}$

$= \dfrac{\left(\frac{1}{3}\right) \cdot (1) \cdot \left(\frac{1}{3}\right) \cdot \left(\frac{3}{8}\right)}{\left(\frac{1}{2}\right) \cdot \left(\frac{1}{2}\right) \cdot \left(\frac{1}{2}\right)}$

$= \dfrac{\frac{1}{9} \cdot \frac{3}{8}}{\frac{1}{8}} = \frac{3}{9} \cdot 1 = \frac{1}{3}$

(b) ?

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6. ~~$P(C=1 \mid J=1$~~

$P(M \mid C, J) = \dfrac{P(C \mid M) \cdot P(J \mid M) \cdot P(M)}{P(C) \cdot P(J)} = \dfrac{0.99 \cdot 0.98 \cdot 0.01}{0.5 \cdot 0.4}$

$= 0.04851$