

$$3.8 \text{ (i)} \quad P(P_r | B_+ = n, U_+ = n) = \frac{P(P_r, B_+ = n, U_+ = n)}{P(B_+ = n, U_+ = n)}$$

$$P(P_r, B_+ = n, U_+ = n) = \sum_{H_0} P(P_r, B_+ = n, U_+ = n, H_0)$$

$$P(B_+ = n, U_+ = n) = \sum_{P_r} P(P_r, B_+ = n, U_+ = n)$$

$$P(P_r, B_+ = n, U_+ = n, H_0) = P(U_+ = n | H_0) P(B_+ = n | H_0) P(P_r | H_0) P(P_r)$$

$$P(P_r | B_+ = n, U_+ = n) = (0.53, 0.47)$$

$$(ii) \quad P(P_r | B_+ = n, U_+ = n) = (0.449, 0.551)$$