

$$p(\mathbf{Q|U}) = kp(U|Q)p(Q), \quad \text{dove } k = 1/p(U)$$

$$p(U|Q) = p(U|P)p(P|Q) + p(U|-P)p(-P|Q)$$

$$p(P|Q) = p(P|R,Q)p(R) + p(P|-R,Q)p(-R) =$$

$$0,95*0,01+0,8*0,99 = 0,80$$

$$p(-P|Q) = 1 - 0,80 = 0,20$$

$$p(U|Q) = p(U|P)*0,80 + p(U|-P)*0,20 = 0,7*0,8+0,2*0,2 = 0,60$$

$$p(\mathbf{Q|U}) = kp(U|Q)p(Q) = k*0,6*0,05 = \mathbf{k*0,03}$$

Analogamente si calcola:

$$P(-Q|U) = kp(U|-Q)p(-Q) = \dots = k*0,20$$

$$P(\mathbf{Q|U}) = 1 - p(-Q|U)$$

$$\text{cioè } k*0,03 = 1 - k*0,20 \quad \text{da cui } k = 4,35$$

$$\text{Così: } p(\mathbf{Q|U}) = 4,35*0,03 = \mathbf{0,13}$$