\[
P(E_n) = \frac{4000}{7000}
\]

\[
P(E_n \cap U_5) = \frac{3000}{7000}
\]

\[
P(E_n | U_2) = \frac{3000}{5000} = \frac{P(E_n \cap U_2)}{P(U_2)}
\]

\[
P(E_n | G_n) = \frac{P(E_n \cap G_n)}{P(G_n)} = \frac{1000}{2000}
\]

\[
P(S_e | U_5) = \frac{P(S_e \cap U_5)}{P(U_5)} = \frac{2000}{5000}
\]

\[
P(S_e | G_n) = \frac{P(S_e \cap G_n)}{P(G_n)} = \frac{1000}{5000}
\]
Ex 2.26

\[ P(CV) \]

\[ P(00) = (1-p)(1-e) \]
\[ P(01) = (1-p)e \]
\[ P(10) = pe \]
\[ P(11) = P(1-e) \]

\[ P(BCT \text{ Arrive } \text{ OK}) = (1-p)(1-e) + p(1-e) = 1-e \]

\[ P(RC|Xm1) = \frac{P(RC \cap Xm1)}{P(Xm1)} = \frac{p(1-e)}{p} \]

What I want is \( P(Xm1|RC) \)

Bayes Rule
\[
P(x_m | Rc1) = \frac{P(x_m | Rc1 \cap Rc1)}{P(Rc1)}
\]
\[
P(Rc1) = P(x_m \cap Rc1) + P(x_m \cap Rc1)
\]
\[
p(1-e) + (1-p)e
\]
\[
= p - pe + e - pe = p + e - 2pe
\]
\[
P(x_m | Rc1) = \frac{p(1-e)}{p + e - 2pe}
\]

\[\text{Example:} \ p = 0.5, \ e = 1 \]
\[
\frac{0.5}{0.5} = 0.9
\]
\[\text{Example 2:} \ p = 0.9, \ e = 1 \]
\[
\frac{0.81}{0.82} = 0.99
\]
\[
p = 1, \ e = 1 \]
\[
\frac{0.09}{0.08} = 0.5
\]