Problem 2. a. P(R/s) = P(s/R).P(R)/P(s) = 0.7 P(R)75) = P(-5|R).P(R)/P(-5) = 0.3. P(-s|R) = 1- P(s|R), P(s) =0.25, so P(-s) = 0.75 P(SIR). P(R) = 0.7X0.25 and P(7)1R). P(R) = 0.3X0.75 p(sir).p(r) + p(-s|R).p(r) = p(R).(p(s|R)+1-p(s|R)) $2 \cdot P(R) = 0.7 \times 0.25 + 0.5 \times 0.75 = 0.4.$ P(We) = P(S, R, Wo, We) + P(S, -R, Wo, We). + P(s, R, TWO, We) + P (TS, R, WO, We) + P(s, -R, -Wo, we) + P(-s, -R, Wo, We). 1+pC-15, R, -wo, we) + PC-15, -R, 7Wo, we) P(S, R, wo, we) = P(welwo, R) - P(wo, R, S) = P(We|WO,R).P(WOIR).P(RIS).P(S) $= 0.12 \times 0.7 \times 0.7 \times 0.23$ 0.0147 P(S,-R, wo, we) = P(we | no, -R) . P(wo, -R, S). = P(we|wo, -R). P(wol-R). P(t-P(RIS)). P(s) = 0. 1x 0.) x 0,3 x 0,25 $= 0.1 \times 0.1 \times 0.3 \times 0.25$ = 0.0015



```
P(75, R, W0, We) = P(We | W0, R) \cdot P(W0, R, 5)
= P(We | W0, R) \cdot P(W0 | R) \cdot P(R | 5) \cdot P(5)
= 0.12 \times 0.7 \times 0.3 \times (1-0.25)
= 0.0189

P(5, 7R, 7 W0, We) = P(We | 7W0, 7R) \cdot P(7W0 | 7R) \cdot P(7R | 5) \cdot P(5)
= P(We | 7W0, 7R) \cdot P(7W0 | 7R) \cdot P(7R | 5) \cdot P(5)
= 0.0048.

P(75, 7R, W0, We) = P(We | W0, 7R) \cdot P(W0, 7R, 75)
= P(We | W0, 7R) \cdot P(W0, 7R) \cdot P(7R | 75) \cdot P(75)
= 0.0185
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P(M,S)=P(M,S,R, Wo, We) + P(M,S, -R, Wo, We)
                           + PCM, S, R, TWO, We) + P(M, S, R, WO, TWE)
                          + p(M,), -R, - wo, we) + p(M, S,-R, wo, - we)
                   +PCM,S,R, -wo, -we)+PCM,S, -R, -wo, -we)
               TALMENICAN BOOK DE BEEFE THE M
             P(M,S,R, Wo, We) = P(M) we). P(We, WO, R,S)
                                           = P(M) we). P(welk, wo). P(wolk). P(R/s). pcs)
                                            = 0.02 x 0.12 x 0.7 x 0.7 x 0.25
               5.0.000294
P(M,S, -R, Wo, we) = P(M | we) . P (we, wo, -R, S)
                     = P(M/We). P(We/>R, WO). p(WO/-R). P(-R/)). P(5)
                                          = 0.02 x 0. | x0.2 x (1-0.7) x 0.25
                                           = 0,00003.
                      deal of the second of the seco
             R(MS, R, > WO, We) = P(M | We) . P(We, > WO, R, S).
                                               = pCM we) . P(wel R, - wo) . p(wol R) . P(R/s) . P(s)
                                              = 001 × 0.25 × (1-0.7.) × 0.7 × 0.25
                                                =0.00.026250 = TOTAL COMPANY = (CIA)
             PCM,S,R, WO, TWE)=P(M/TWE).P(TWE, WO, R,))
                                            = P(M1-we). P(-welR,wo). P(wolR). P(RIS). P(S)
                                            = 0.42x (1-0.12)x0.7x0.7x0.7x0.25
                                 = 0.04528
                                                                           are some of his
             P(M,S, -R, two, we) = P(M | we) . P(we, -wo, -R, s)
                                              = P(M | we) . P(We| -R, -Wo) . P(-Wo) -R) . P(-R(S). P(S)
                                         =0.02×0.08×(1-0.2)×01-0.7)×0.25
                                              = 0,000096.
```



 $= 0.42 \times (1-0.23) \times (1-0.7) \times 0.7 \times 0.23$ = 0.016538 $= P(M, S, R, \neg wo, \neg ve) = P(M, \neg we) \cdot P(\neg we, \neg wo, \neg R, s)$ $= P(M, \neg we) \cdot P(\neg we, \neg R, \neg wo) \cdot P(\neg wo, \neg R) \cdot P(\neg R, s)$ $= 0.42 \times ([-0.08) \times ([-0.2) \times (1-0.7) \times 0.25$ = 0.023184 P(M, s) = 0.023184 + 0.000367 + 0.0003696 + 0.0003675 = 0.02135

 $P(B,S,R,\neg wo) = P(B|S,\neg wo) \cdot P(R|S,\neg wo)$ $= P(B|S, \neg wo) \cdot P(\neg wo|R) \cdot P(R|S) \cdot P(S)$ $= 0.4 \times (1-0.7) \times 0.7 \times 0.25$ = 0.021 $P(B,S,\neg R,\neg wo) = P(B|S,\neg wo) \cdot P(\neg R,S,\neg wo)$ $= P(B|S,\neg wo) \cdot P(\neg wo|\neg R) \cdot P(\neg R|S) \cdot P(S)$ $= 0.4 \times (1-0.2) \times (1-0.7) \times 0.25$ = 0.024

PCS, B, -WO, -R) = P(B|S, -WO) · P(S, -WO, -R) = P(B|S, 7W0) . P(-WO,R) . P(R15) . P(S) 1 = 0.4 x (1-0.7) x (1-0.7) x2.25 = 0.009. P(S,B, 7W0) = 0.009+0.021 = 0.03. a soft of the first the file of the second PCB, -WO) = PCS, B, -WO, R) + P(-S, B, -WO, R) + P(S, B, > WO, >R) + P(->S, B, > WO, >R) P(-5) B, 7 WO, R) = P(B|75, 7WO). P(-WOIR). P(R/75). P(75) = 0.4 x (1-0.7) x 0.3 x (1-0 25) -1.0.02724-1.31 P(75,B, 7WO, 7R) = P(B175, 7WO) · P(2WO17R) · P(7R) 75) · P(7) = 0.4x (1-0.2)x (1-0.3)x (1-0.2t) = 0.168. P(S/B, 7 Wo) = 0.03 /(0.03+0.0027+0.169) = 0.1333.