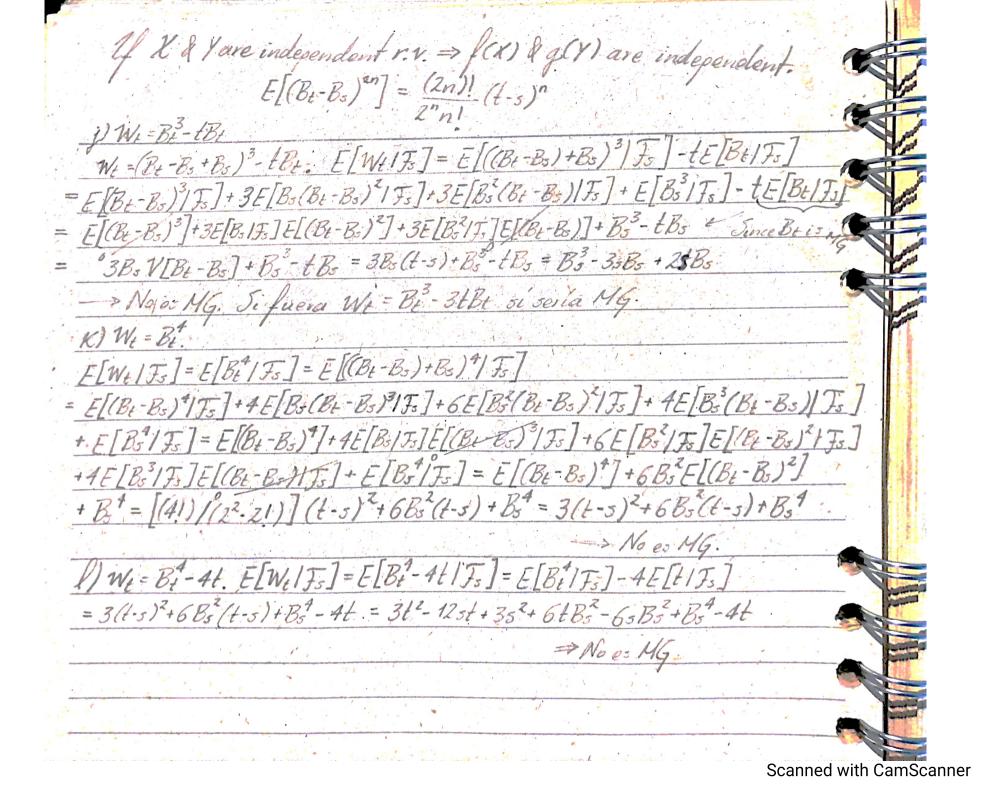
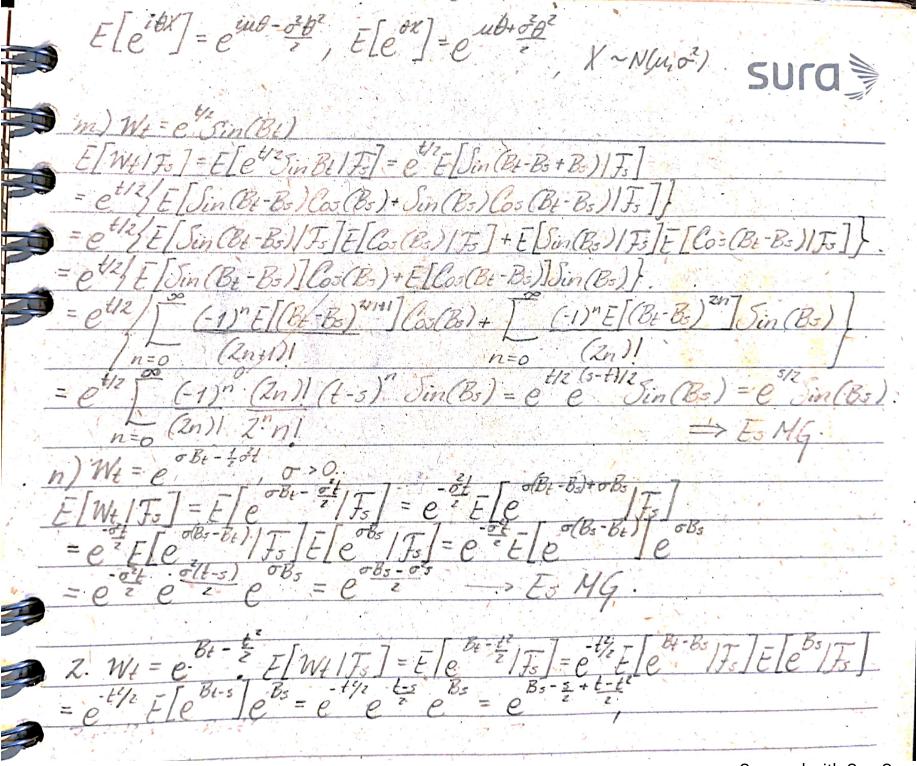




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e) W+ = B+ + 44
     E[W_t/\mathcal{F}_s] = E[B_t + t + t/\mathcal{F}_s] = E[B_t - B_s/\mathcal{F}_s] + E[B_s/\mathcal{F}_s] + 4E
= E[B_t - B_s] + B_s + 4E - B_s + 4E \rightarrow No. MG
     [W+17s] = E[Bt11/Ts] = E[Bt11-Bs+1/Ts] + E[Bs+1/Ts]
                   = E[Ben-Boti] + E[Boti-BolJo] + E[BolJo]
                  = E[Bs+1-Bs]+Bs = Bs. -> No MG.
   9) Wt = Bt-Bto, Octo 45 fijo
    E[WEITS] = E[BE-BEOITS] = E[BE-BSITS] + E[BOITS] - E[BEOITS]
      omo to Es => E[Bt. IJs] = Bto
                = E[Bt-Bs]+Bs-Bto = Bs-Bto. => Es MG.
    h) WE=Br+Bt, T>O tog seter
     E[W+17] = E[B+B+17] = E[B+Bs 17] + E[B+Bs 17] + ZE[B+17]
               = E[B_r-B_s]+E[B_t-B_s]+2B_s = 2B_s. -> No MG.
    i) Wt = Bt - Already done in class.
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A. = K. Bt + Lt



1. We = B, (E) B2(E) [| W+ | Fs] = E | B, (+) B2(+) | Fs] = E [B, (+) | Fs] E [B2(+) | Fs] [E[B,Ct)-B,Cs) [Ts] + E[B,Cs) [Ts] | E | Bz(t)-Bz(s) [Ts] + E | Bz(s) [Ts] E[B, (4)-B, (5)] + B, (5) [E[B, (4)-B, (5)] + B, (5)] = B, (5) B2(5) => EMG W. = B. + AL Vetermine At talque Wt = Bt + At es MG. WELTS = E/BE + AE / TS = E/BE / TS + E/AE/TS. = 3(t-s) +6B=(t-s)+B\$ + E[A+1]5 (B+-Bs) + F5 + 6 E Bs (B+-Bs) = T5 + E Bs + F5 + E A+ IFS a At = K(t)Bt = -3(t-s)+6Bs(t-s)+Bs+ K(t)[t-s+Bs] = -3t2-6t5+352+6Rst-6B35+B54+K(t)t-K(t)5+K(t)B5 on K(t) = -6t = 312-6\$t+352+66B5-65B5+B5-66465t-68B5 = -3t +352 - 65Bs +Bs Sequiere que sea Martingala -3/435 65 B5 4B5 = Bt - 6 tBt => Bo -65Bs +352 = Be -6tBe +3t2 nego At = -6+Bt+3t2 hace que Wt sea

6. I Washen to E[Walter] = a War + BWaz atB = 1. Vetermine A tal que In = A Wn+ Wn-1 sea Martingala. E[Yn 17-,] = E[AWn + Wn-, 1] = AE[Wn 1] + E[Wn-, 1] = A[xWn-, + BWn-2] + Wn-, = AxWn-, + ABWn-2 + Wn-, = (Ax+1)Wn-, + ABWn-2 Para que sea Martingala, (Ad+1) Wn-1+ AB Wn-2 = AWn-1+Wn-2 => Ax+1=A -> A(1-x)=1 -> A=1 | AB=1 => A=1=1 Yn = 1/2 Wn + Wn-, => E[Yn | Jn-,]=1/2 E[Wn | Jn-,] + E[Wn-,] Jn] = (1/3)(0 Wn-1+ BWn-2) + Wn-1 = (0/3+1)Wn-1+ Wn-2 = (1/3)Wn-1+ Wn-2 --->MG. A=1/B. 7. Wn = [a+ BWn-1, conprobabilided Wn-1. Si x+B=1 > Wnes 1/6Wn-1, can probabilidad 1-Wn-1 Mertingala F/Wn/Fni = (a+BWn-1)Wn-1+BWn-1(1-Wn-1) = (x+B) Wn-, = Wn-1