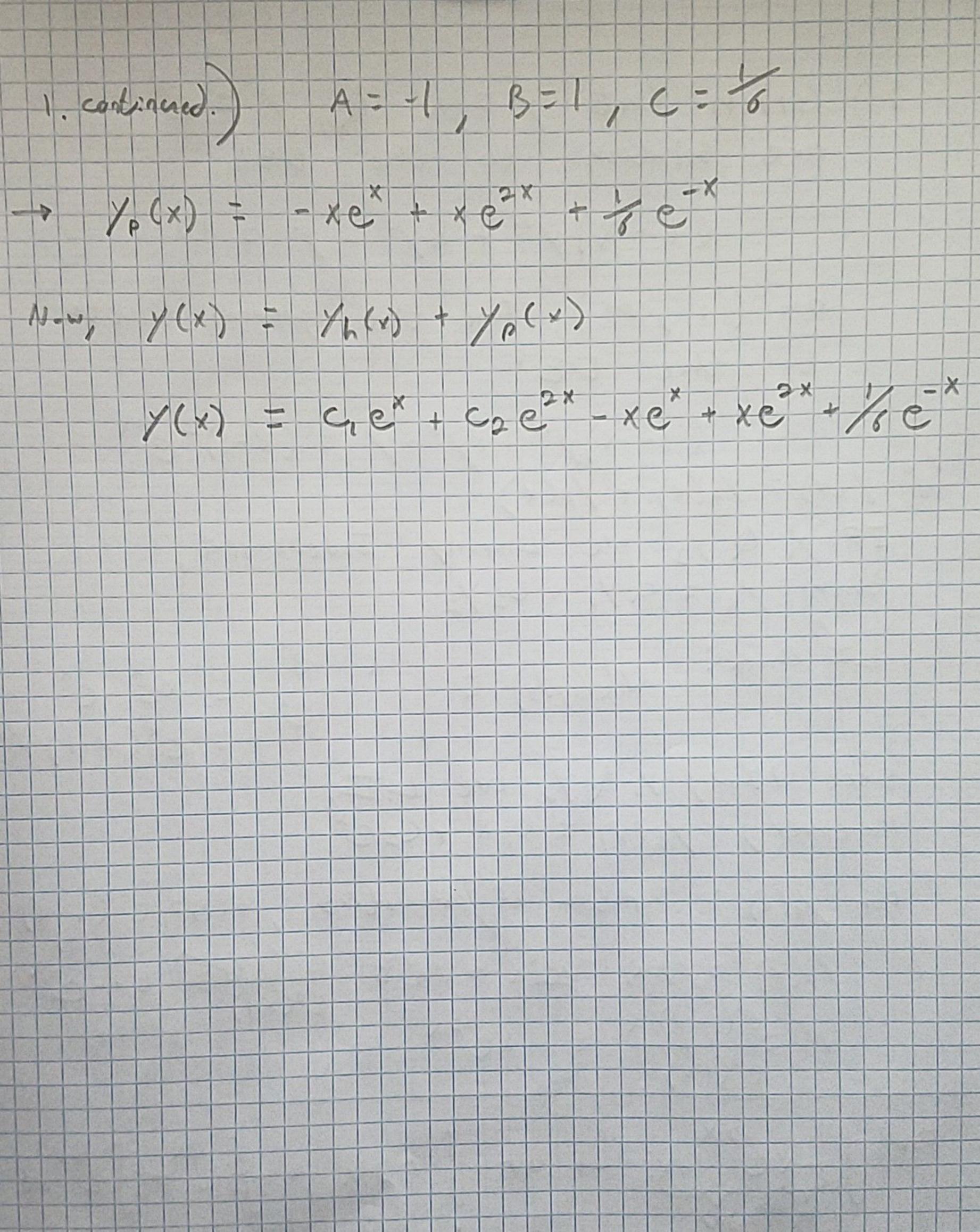
Bennet Sloan 11/5/2018 Mth 256- HW6 1.) Use the method of undetermined coeff. to Find the peneral solution to the DEi y"-3y'+2y=ex+ex+ex For Y₁(x): Y"-3y'+2y = 0 !. + = 1,2 +2-3r+2 = 0 /(x)=c,e+c,e (r-1)(r-2) = 0 /(x)=c,e+c,e For ye(x): Assume Aex+Bet + Cet (x, deplicate)

Ye(x) = Axe+Bxex+Ce+ = Aex + Axex + Be2x + 2Bxe2x - Ce-x = Aex + A(ex + xex) + 2Be2x + 2B(e2x + 2xex) 10"(x) = 2Aex + Axex + 4Bex + 4Bxex + Ce-x substitute: (2Aex + Axex + 4Bex + 4Bex + Cex) 3 (Ae + Axe + Be2 + 2 Bxe2 - Ce+) 2 (Axe* + Bxe2+ Ce-x) = ex+e2x+e-x Be=x + (Ce-x = ex + e=x 1-1-3



Independent LI check: W(1,1/2) + X & = e*(x-1) 70 Since WZO, Y, & /2 are L.I.
Moreover, /h(x) = C, x + C2ex For /e(e): Variation of parameters, f(r)= e (1-x)