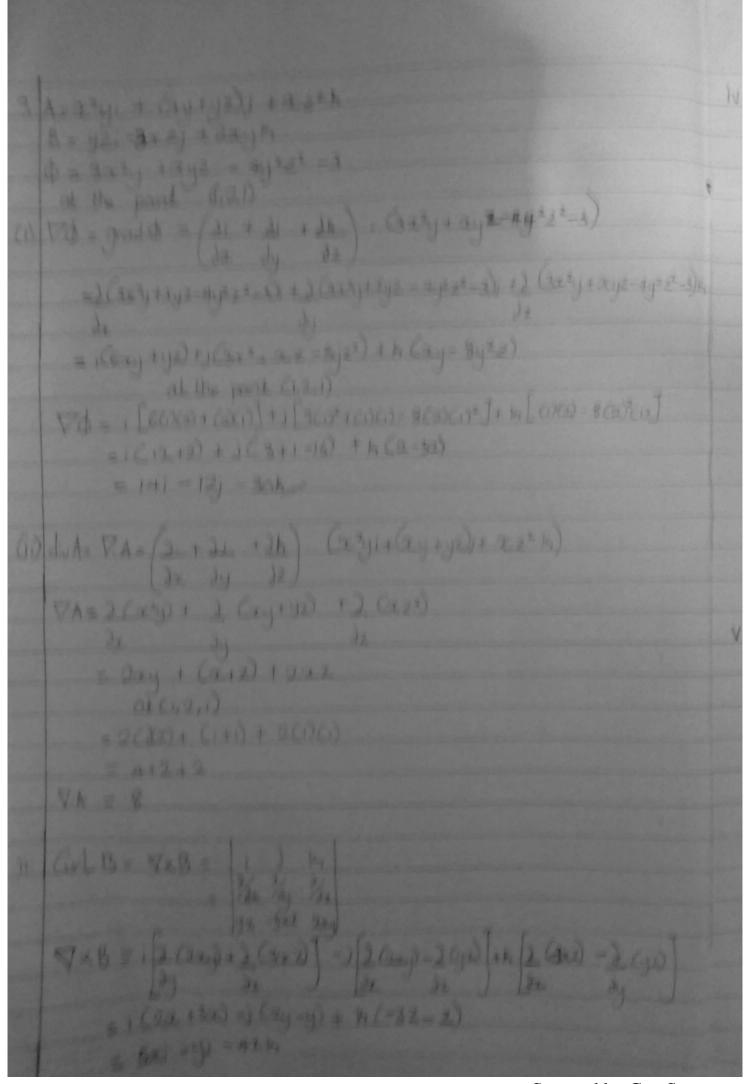
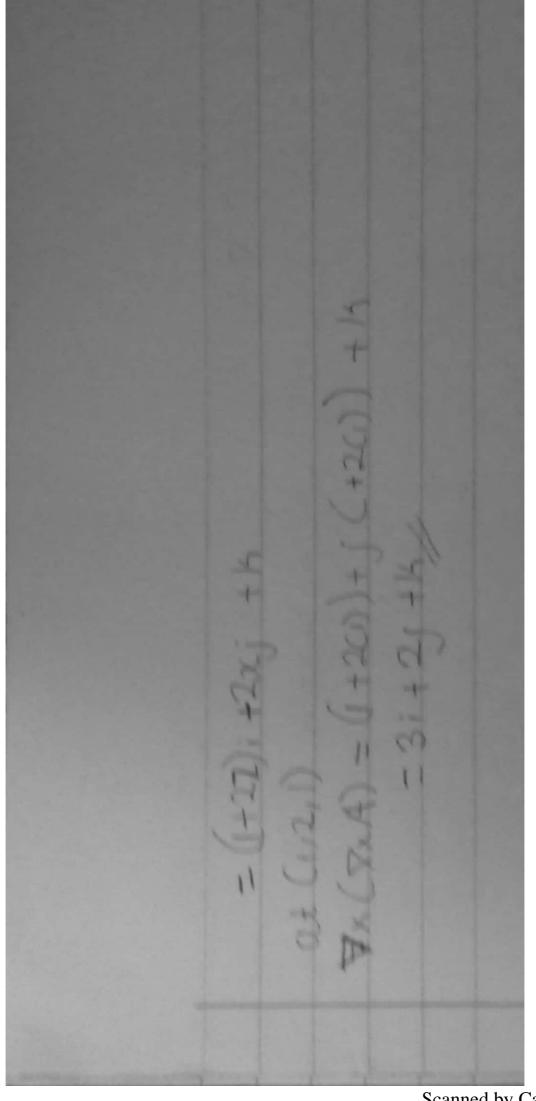
TENG 785 Assignment III 10 Mathematical modelling can be defined as the grocess of setting up a model of an angineering problem, solving it mathematically and interpret the result in physical or other terms. The model is the formulation the problem as a mouthernatical expression in terms of variables, fine and equations. (ii) Two Methods of obtaining models for engineering systems of Malthu's Law B) Exponential growth and decay 2 r= (+3b) - 25n3kj +3e2k a) dr. = (26+3) i - 60053t j +6e2t K (i) d21 = 2; + 186in3tj + 12e2+14 (ii) at t=0, d2 = 2i + 185in 3(0) j + 12e2(0),  $\begin{vmatrix} 12^{2} \\ 14^{2} \end{vmatrix} = \sqrt{2^{2} + 12^{2}}$   $\begin{vmatrix} 14^{2} \\ 14^{2} \end{vmatrix} = \sqrt{4 + 144}$   $= \sqrt{148} = 12.17$   $\begin{vmatrix} 11^{2} \\ 11^{2} \end{vmatrix} = 12.17$ 



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N Smoods A = V(X-A) V-A=(21+24). xyi+(xytyz)+xz2h = 2 (223) + 2 (24+42) + d (222) V.A = 2xy + (x+2) +2x2 V(V.A) = (21+21+2b). 2xy + (x+2) + 2x2 = 2 (22y+(212)+222)i+2(22y+(2+2)+222)+2(22y+(2+2)+222) = i(24+1+22)+2x1+C1+2x14 at (,2,1) V(V.A) = [0000+1+20)]; + [20)] + [1+20)] H = (4+1+2): +2; + (1+2) 14 = 71 + 21 + 34 V Corlant A = TX (XXA), VXA = 123y (2yty2) x22 = i fo (x 22) - 2 (xy+y2)] - i 2 (x22) - 2 (324)] + 1 (2 (24)+y2)+2 (32 TXA = (4) i - 22 j + (y-x2) K Vx (VxA) = = [2 (4-2)+3 (2)]+1[3 (4-2)+3 (4)]+1[2 (4)]+1[2 (4)] (V+(x4)= i(1+22)-j(-22)+14(1)



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