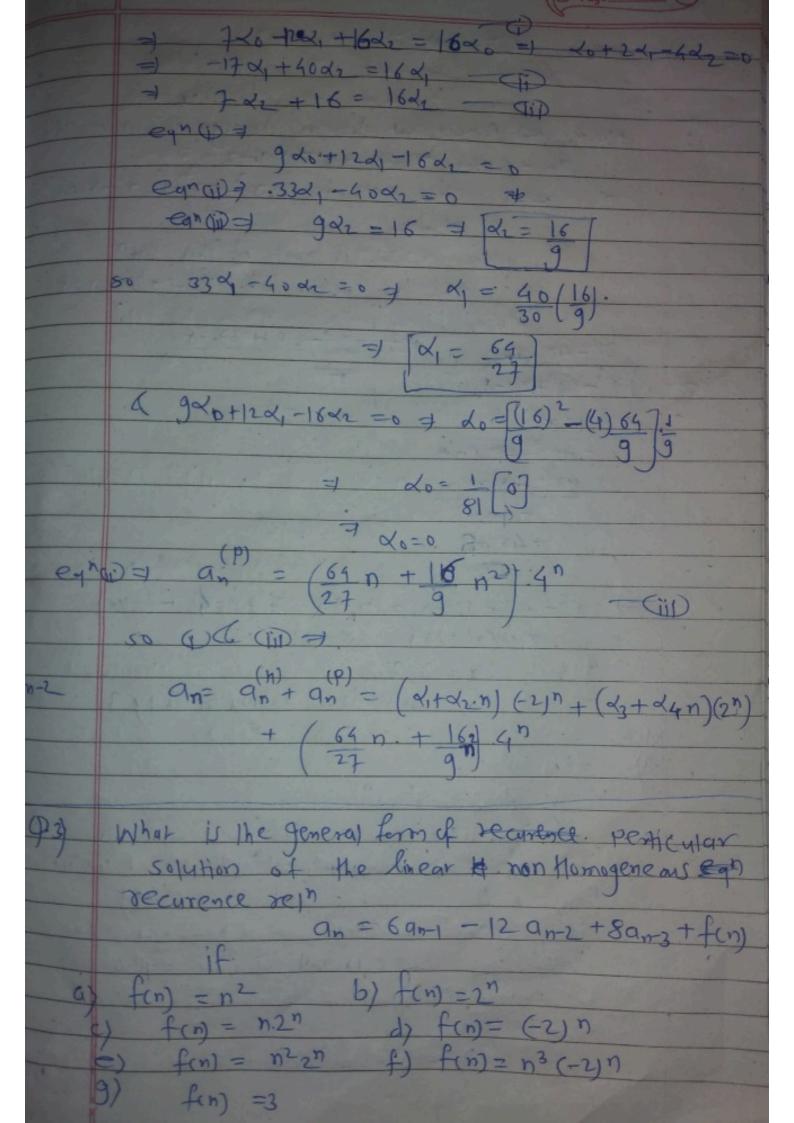
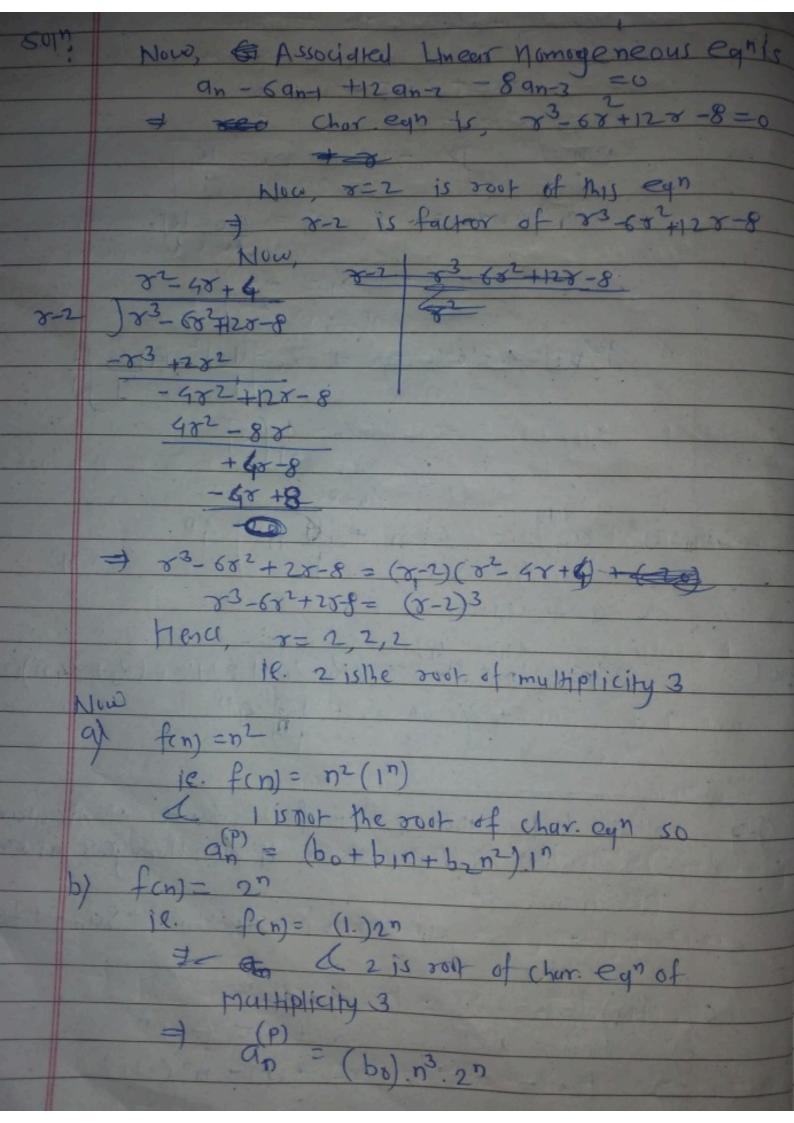
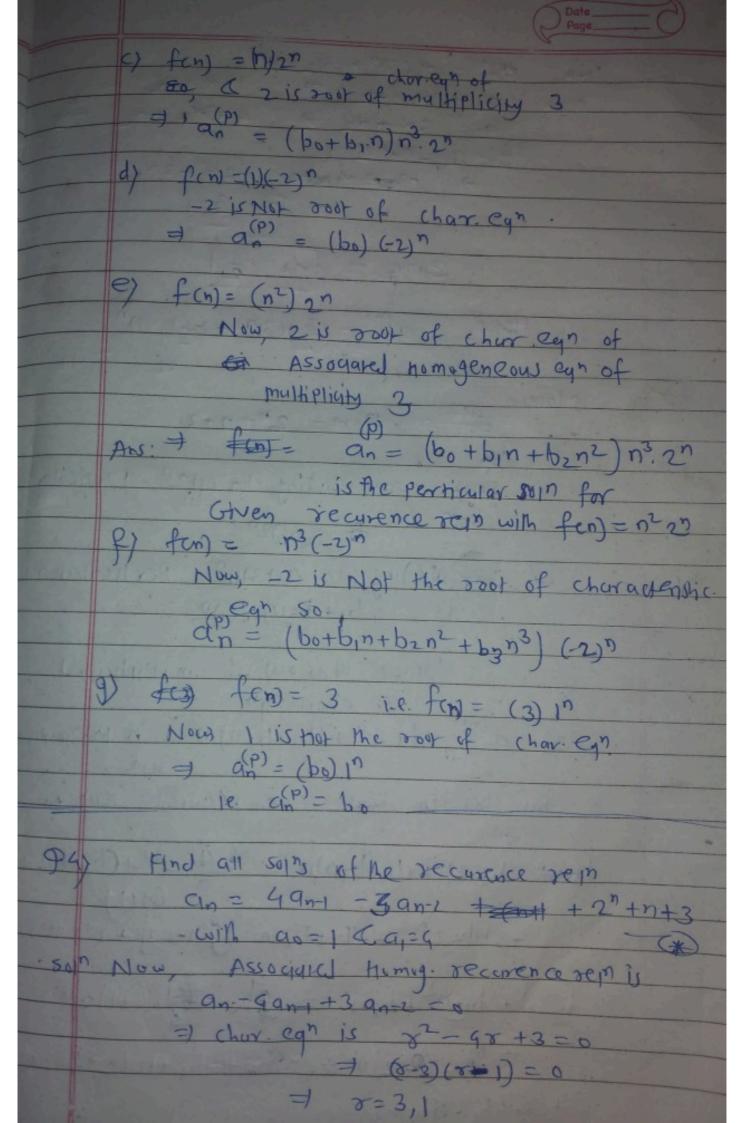
QI) Solve the Given recurence rep. an = san-2 -4an-4 with a0=3, a1=2, az= 6 d c13=8 Now, The reconce repris order of 7 an - 5 anz + 9 an- 4 = 0 - 00 Degree of 7. Characteristic ego of @ is this eqn is 4 - 4 · 6 3. ie egn () is 9n+(0)9n-1+(-5) 9n-2+(0) an3+49n-4=0 - Now, & order of this egn q 7 degree of characteristic egnis & so, characteristic egn is, x4+(0)x3+(5)x2+(0)x+4=0 Je 79-582+4=0 7 (82-4)(82-1) =0 50, an= of (2) 1 + of (+2) + of (-1) + of (-1) + of (-1) + of Now, Put n=0, n=1, n=2, n=3 in this eqn, =3=a0= d,+d2+d3+d4 -0 7 2=91=-2×1+2×2-3+×4 6=92 = 401 + 402 + 03 +04 Til 8 = a3 = -8 ×1 +8×2 - ×3 + ×4 Hence, After solving this system of linear ean we g will get unique son for values for (m)cnown &1, ×1, ×3, ×4. a Rur this Values in (xx) Q2) solve the Given Non homogeneous recycline sein an = 8an-2 - 18an-4 + n240 - (x) SOM NOW, - Associated total Som of Mis egrad is 9n= 9n+ 9n where and is son of Associated Homogeneous ean

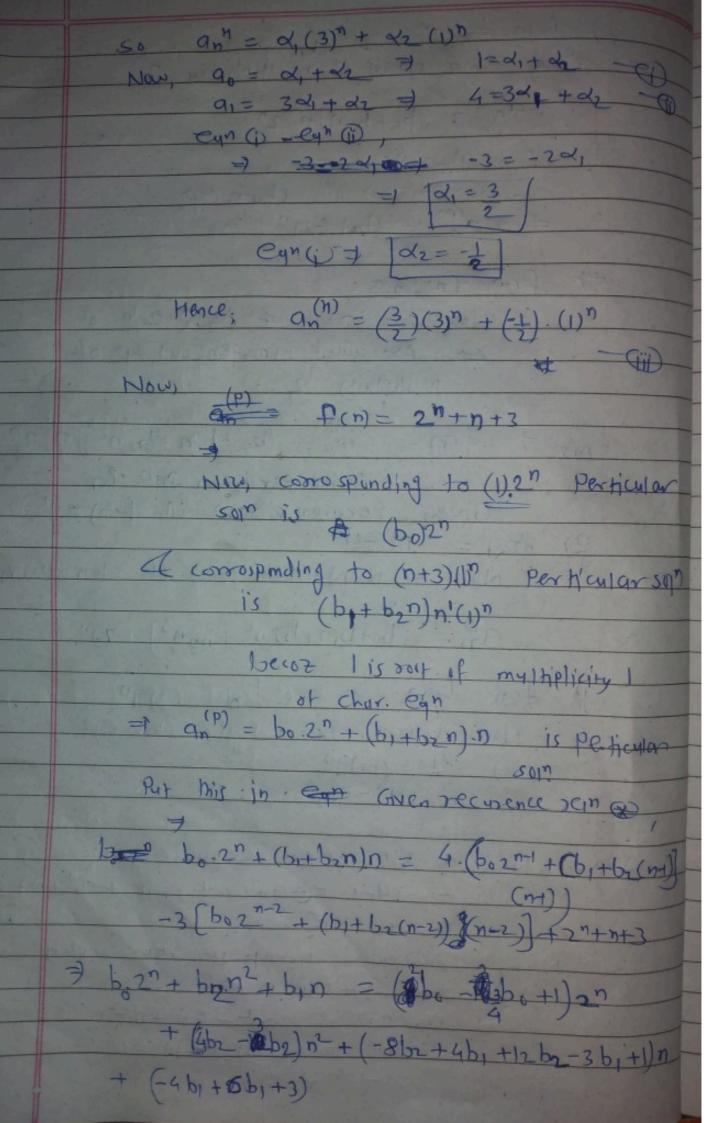
Now Associated nomogeneous egn is an= 89n-2 -16 an-4 = an + (0) ant -8 an-2 + (0) an=3 + (-16) an=4=0 = The characteristic equis, 74+(0). 83-882+(0). 8+16=0 18. x4-8x2+16=0 7 (8-4)2=0 F 7= +2,+2, 7 an = (x1+x2n) (-2)n + (x3+x4n) (2)n (: -2 d 2 are roots of multiplicity) Now, FCm = n24n from Given recurence rein Sa Now, 4 is Not the mot of Choracksitic ean multiplicity

Here Perficular soln is of the form, $\frac{1}{a_n^{(p)}} = (d_0 + d_1 n + d_2 n^2).4^n - a_1^n$ Pur this eyn in given recurence rein ((do+d,n+d2.n2) 4" = 8. (do+d, (n-2)+d2(n-2)), 4"-2 -16 (do+d, (n-4) + d2 (n-4)2)4n-4 n24n = (do+din+dzn2)4n=1[do+(-2)di+4dz)+(di-4dz)n + dz.7 4" - 1- [(do - 4d, + 164) + (- 8dz) + dzn2].4" + n24" = (do+d, n+d2 n2) 4" = [do-2d, +4d2 - do-4d, +16d2] + 1-20/1+602 +01-802 10/10 + [-d219 - 10/21 +10] n2/47









1+462+1= b. 42bit3 = 0. = $\frac{1}{9}$ $\frac{9}{9}$ $\frac{9}{7}$ $\frac{9}{7}$ is perfuga som $a_n = a_n + a_n^{(p)} - (\frac{3}{2})(3^n) - \frac{1}{2}$ (9).20 + (-3 - 1 n).n An 710