552.3 Homogeneous It quations. Def: A fan. f(xx), said to be a honogeneous ftm. if it can be written as チ(tいtか)=t" fmx). for some real No. n. In this case we set of T Homogeneous 7th. 2+ degree n. w flog) = 42 - 344 +542 Homo: Degree 2

How ; Degree 2

How ; Degree 2 (3) 7(NO) = N3+43+1 Non-Homo: (4) 7 (m) = 24 + 4
How: Berre 0 Defn A Diff. Sem. of the form 0 = the court + xb (km) M is Homogeneous if both coefficients M&N Method of Soln: Let Y=UN or N=12yree.

Somet to Separable.

Solve

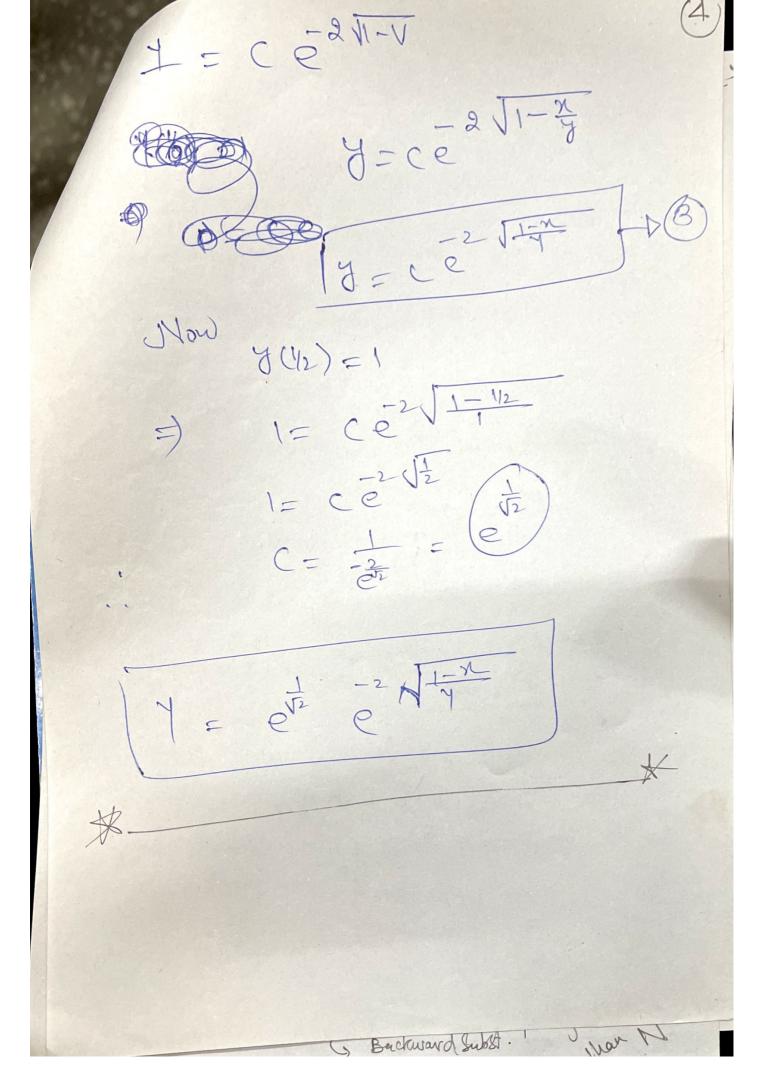
Backward Subst.

Jan N

2.3 Exercises 29) (x2+my-y2) dx + myd+=0 John. Mere Coefficient of dy is sompler than that of dx, so -: we let 17 = UN - + 0 =) ldy = udn+ndy+0 Sev. Le come! (x2+ ux2 - u2v2) qx+ ux (nqx+nqm)= (1+4-4) x2 dx + 42 n2 dx + 4 n3 du =0 (1+4-42+42)x2 dx + 4 x3 du =0 (1+4) n3dx +4 n3 du =0 $\frac{\chi^{2}}{\eta^{3}} dx + \frac{u}{1+u} du = 0$ $\frac{1}{\eta} dx + \frac{u}{1+u} du = 0$ $\frac{1}{\eta} dx + \frac{u}{1+u} du = 0$ $\frac{1}{\eta} dx + \frac{u}{1+u} du = 0$ In/M + (1- 1/4) Oly = 0 1-1/44

In/M+4 = C+ In 7/4 = C-4 = C-4 = 1/4/4 = C-7

(x+ \(\frac{1}{12}-ny\)d\(\frac{1}{2}=4\), \(\frac{1}{12}=1\) Solm. Sem. ingles (N+ JYZ-XY) dy = Ydx Here M& N are both Howofton, of Degree 1 M=Y) is Simpler, 80. (184+182-1892) dr = 4 (18d4+18d4) 27 dy + y 11-2 dy = 12 y dy + y2 dl y2 dy = 1 dx 1 dd = - 11-451/2 (4) dl In 17/= - 1-4 + # Inc In 181 = = 2 11-12 + HI. In C In 7 = -2 JI-V



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