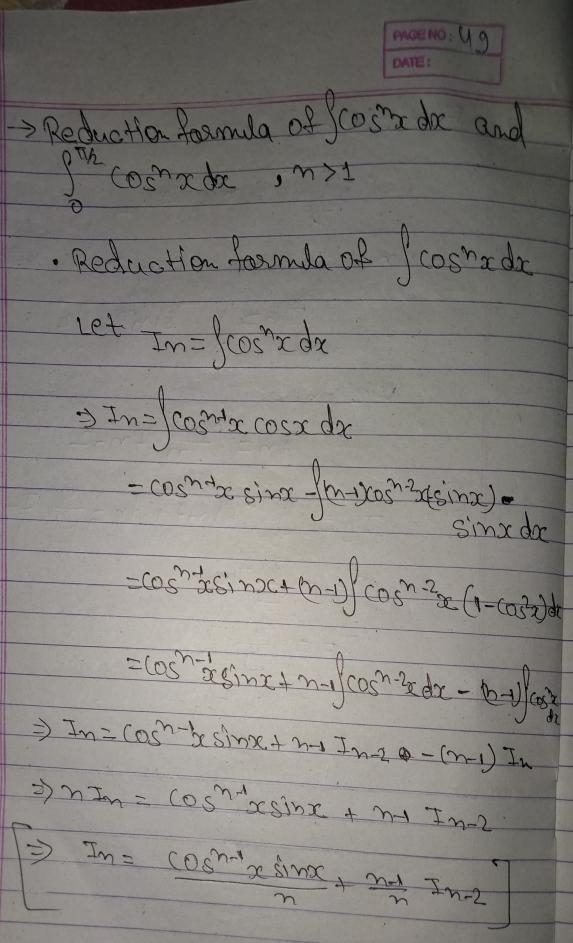
Reduction foormula: Reduction formula holps to Solve high order proper integral by converting them in Simple form. To obtain reduction formula of of order n' like of 2h dr. we first assume it be equal to explored like Ins Janda

PAGE NO : 46

Then, solve this integral (mainly by integration by part) to get reduction formula only in terms of idententity. -> Rediretton farmula of Jsin and f sinnada. · Reduction formula of John a da DIngsinn & dx > In= fsinn-1x sinx dx = SInn-2 (- (052) | d sinn-2 | since = Simn-1x(-cosx)-fm+1sim2 cosa. (-cosx)da =- Sinn 2005x+ [m-1) sinn-2x (obrah = -sim-2005x+(n-1) sim-2x(1-sinx)da シエルニー Sinn-iz cosx4 n-1 Sinn-2xdx - M-1) Sinnade > In = -8inn-12 cosoc+(n-1) In-2 - (n-1) In

PAGE NO: 47 3 Int (m) In= -sint x cosx + (n-1) In2 3) nIn= -sint x cosx + (m-1) In2 2) In= -simbacosx + n-1 In-2 · Reduction formula of J. Sinox de Jn=) Sinnada we know Trefsingde = - Sinn-2 Cosa, n-1 In2 So, Jn = [In] 11/2 > Jn = | Sinn x cosx | 1/2 | n | In 2 | o = 0 + n-1 Jn-2 1 2) Jn = n Jn2

Q. Find the value of 1 Sima da the seduction of formula of In= Simada we know, In= ~ In-2 79= 5 12 812 x dx = 8 77 I7 = 5 IS IS = 4 I3 了了了了了 I, = ITh Sing da = [-(osx]]/2 = 8 × 8 × 5 × 3 × 1 <u>n8</u>



· Reduction formula of & coope de Let In- IT/2 cost xdx = [In] The 3Jn= (05m-26sing) 71/2 + 2-1 [In2] 1/2 => Jn = 0 + n-1 Jn-2 [2) In= n-1 Jn2 -> Reduction formula of Jsinmacosnadoe

and 17/2
Sinmacosnadae 4mosnost. · Reduction of sinmacosma da Im,n= Jsinmacosma da = cosn-1x simmx cosx dx I my har Con The Com T

PAGE NO: S 1

[cosdx = dsinx

= cosh-ix Janux d'sinx - Jon-i) cosh-2x sinx Jestina desinx

 $= \frac{3h^{m+1}}{m+1} + \frac{1}{(n-1)} \frac{3h^{m+1}x}{m+1} dx$

= cosn-1 81 2ma1 2 + (m-1) cosn=2 sinmas doc

> Im, n = 1 (08 nt 2 simming + n-1 Tmon n-2

=> Im, n = cos x sinmto + n-1 Im+2, n-2

another reduction formula

Im, n = cosnat sinnat , n-1 - Im, n-2
m+n m+n