Exercuise 4.b:-	
1, y'' + y = secx	
$m^2 + m = 0$	
Taking squaring both side.	
$\sqrt{m^2} = \sqrt{-1}$	
$m = \pm \frac{3}{2}i$	
y = C1 COSN + C2 Sin (-X)	
$y = -C_1S_1 \hat{n} \times + C_2C_0S_1$	
$W = y_1 y_2 $	/
y, (y ₂)	
$w = \cos x \sin x$	
-Sinn cosn	
= cosx(cosx) - sinx(-sinx)	
$= \left \cos^2 x + \sin^2 x \right $	
w =	_

_1_1202 : Est
$U_1 = 0$ $Sinx$
SECY. LOSH
= 0 - Sinn(secn)
= - Sinx Secx.
= - tanx
$W_2 = \cos x 0$
-sinu secu
= cosx(secn) - D
= COSX SECY
= 1
u, = Sinx
$y'_{i} = -tanv$
= -tany
$H_2 = 1 = 1$
$U_2 = \underline{I} = \underline{I}$

	1202 :616	
	Jui = - Stannedy	
	$u_1 = InlcosxI$	
	Sur = Sldy	
	$u_2 = \chi d$	
	y = In/cosx/cosx + xsinx	
	so the general equation is	
	y = y + yp	
\ \	$y = C_1 \cos x + C_2 \sin x + n \cos x $	
	cosx f xsinx.	
	2, y'' + y = tanx.	
	$m^2 + M = 0$	
	$\sqrt{m^2} = \sqrt{-1}$	
	$m = \pm i$	÷ .
	y = c1 cosx + C2 sinx	
	0	
	W = 1 cosx sinx	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	-sinx cosx	* 1
ACT	$= cos^2 \chi + sin^2 \chi$	

$w_1 = D siny $	
tame cosx	
T CC(T) R COS A	
$w_1 = 0 - \sin u (\tan n)$	
$-\sin x \tan y$	
$\omega_2 = \cos x D$	
-sinx tanx	
w= cosxltann) - 0	
w= cosxtann = losu.	SINY
$W_2 = Siny$	coch
u, = -sinxtany	
	1
$u_i = -sin x. sin y$	
COSY	1
$y'_1 = -\sin^2 y$	
COSM	
$u = -(1-\cos^2 u)$,
LOSM	
$u_1 = cos^2u - 1$	
COSM	

$3) 4'' + 4 = sin^2$	
3, $y'' + y = \sin x$ $m^2 + 1 = 0$	
$\sqrt{m^2} = \sqrt{-1}$	
$m=\pm i$	
$\frac{y}{\sqrt{c}} = c_1 c_0 s_x + c_2 s_1 s_1 s_2$	
$W = \cos x \sin y$	
-sinu cosu	
$W = \cos^2 u + \sin^2 v$	
W 2 1	
$W_1 = 0$ $\sin \gamma$	
sinu cosy	
$W_1 = 0 - \sin^2 u$	
$W_1 = -sin^2 \chi$	
W2 2 (05 H)	
SINN SINN	
$W_2 = \cos x \sin x - 0$	

$W_2 = Cosysiny$	1
$u_1 = -\sin^2 u$	
$\int u_{1}^{2} = -\int \sin^{2} x$	
$u_1 = -\int 1 - \cos 2\gamma$	
2	75.3
$= -\frac{1}{5} \int_{1-\cos 2y}$	
2	
= -L(u - sin2u)	<u> </u>
2 2	*
$4_1 = -u + \sin 2u$	
2 2	
1 42 2 Scosusinudy	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
multiply and divided by	
2.	
α.	
(u2 = 1) 2 cosusinn dy	**
2	*_
(00)	***
M2 2 1 San 2 nd u	~
d - cos 2 4	<u></u>
M2 2 5	12 13

MTWTFS	
$4z = -1\cos 2u$	
4	
$y = (-\frac{y}{2} + \frac{1}{4} \sin 2u) \cos x + (-\frac{1}{4} \cos x)$	4)
Sinx	
	_
	_
y = y + yp	_
y = c1 COSX + C2Siny - 2 + 1 Sin 2 v)
0 9	
- Leos 2 y Sinn.	
9-11	
4) 4"+4 = Secotano	
	<u>, </u>
$m^2 + 1 = 0$	
$\sqrt{m^2} = \sqrt{-1}$	
$m = \pm i$	
y 7 CICOSH + CZSINM	
UC	
W = cosx siny	
-sinm cosx	
$W = \cos^2 M + \sin^2 y$	
W = 1	

1202 :675	
$W_1 = CONSINN $	
seculani eosx	
$W_1 = O - Sinx(Secretarn)$	
Wi 2 - sinusecutanu	
W2 2 COSX 0	
-sinu secrtanu	
W== cosx(secxtann)+0	
W2 = cosx secretann	
VV = COOM BECK COM	
	- 2
Sui = J-sinxsecytanu	
41 = - Siny. 1 siny cosx cosx	
COSN COSU	
41 = - Stan 2 11	
$u = - \left(\sec^2 u - 1 \right)$	
$y_1 = -tann + M$	
luz = Scosnsectiany	

Marie and the second second	M T W T F (S)	
	42 2 scosu. 1 tanndy	
	42 = Stanudy	
	42 = -IN COSX	
	y = y + yp	
· · · · · · · · · · · · · · · · · · ·	y = cicosn + czsinn + ncosn	
7 77	- tan x cosx - sinvinicosx	7
	y = cicosu + czsinu + u cosu-	
	- tann - sinnIntcosn)	
	y = CICOSH + CZSINH + XCOSY	7
	- sinvinteosxi.	· · ·
/ · · · · · · · · · · · · · · · · · · ·		
	$Q5: y'' + y = \cos^2 x$	
	$m^2 + 1 = 6$	
	$\int m^2 = \int -1$	
	$m = \pm i$	
	y = CICOSX + CZSINM	
	cosu siny	
	$W = \begin{vmatrix} \cos u & \sin u \\ -\sin u & \cos u \end{vmatrix}$	

1202 :6,5	
$W = \cos^2 u + \sin^2 u$ $W = 1$	======================================
W - I	
ul 100 siny	
NT -	
COS'N COSN	
	· · · · · · · · · · · · · · · · · · ·
Wi = 0 - Sinkcosty	
W1 = - 3inucos2 u	
W2 = COSM 0	
-sinn cos2n	
$W = cosu(cos^2 n) - 6$	
$W_{2} = \cos \pi \cos^{3} \pi = \cos^{3} \pi$,
Sui 2 - Sinnes, 4	4
By Substituation.	
We Assume	-
MZ COSY	· -
du = sinndn	_
1 (112 d 4	
4, £ + <u>u</u> ³	

-		
		<u></u>
	$\frac{4}{3} = \frac{\cos^3 y}{3}$	
÷ , .	3	
	$\int 45^{\circ} = \int \cos^3 y$	
		D1 .
	Total To	
	Integration by parts:	
	5 (052, 00)	
- 1 J	= cos n sinn - Sinne 2 cos n	`]
	(-sin) dy	
4	= cos'nsinyt sinzucosudu	
	110° - Tot of	
0,777	Using Substituation	
- 1-4	u = siny	,
	du = cosm	
	= cos 2 u sinn + 2 Su 2 dy	
	2 cos²u sínu + 2.u3	
	3	
	2	
	= cosnsinu + 2 . sin 3 y	
	3	,
	= 31°N°1 / (p(2M + 9 51°)2m)	<i>x</i> '
	$= \frac{\sin n}{3} \left(\cos^2 n + 2 \sin^2 n \right)$	
	= Siny (cos'n + 2 cos'n shinh	
	3	
	$= \frac{\sin 4}{\cos^2 n + 2(1)}$	
	3	

MIWUUS COSH COSH + Siny asina COS 4 + SIN 24 (COS 24 + 2 2 C1 COSH + C28, NN + COS4 + $\frac{3in^2y}{3}(\cos^2x+2)$. = 1[cos44 + sin24 (cos24 + 2) (cosx) = 11+ cos2y)2 $\frac{1+\cos^2 2y}{2} + \left(\frac{1-\cos 2y}{2}\right) \left(\frac{1+\cos 2y}{2}\right)$ cos2y (1-cos22n)+2(1-cos2n).

