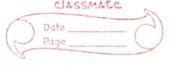
Sol' is $\int (\frac{1-2}{y}) dx + \int \frac{3}{y} dy = C = \sum_{x=2}^{\infty} \frac{1x-2\log x}{y}$ 4/11. P Reducible to exact D.E

Sonsider Mdx + Ndy = 0 - 0. $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial y} = \frac{\partial N}{\partial y} = \frac{\partial N}{\partial y}$ is not exact Θ . $\frac{1}{N}\left(\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x}\right) = f(x)$, a fin of x alone then $J \cdot F = e^{\int f(x) dx}$ dy=0 $\frac{\partial}{\partial y} \frac{1}{\partial y} \left(\frac{\partial M}{\partial x} - \frac{\partial N}{\partial x} \right) = g(y), \quad a \text{ fm } \partial_y \frac{y}{y} \text{ alome.}$ Then $1:F = e^{-\int g(y)dy}$. Q. solve (xy2-c'/23) dx - x2ydy = 0 - 0 Ans. In (1) $M = \pi y^2 - e^{y/3}$ $N = -\pi^2 y$ $\frac{\partial M}{\partial y} = \frac{2xy}{\partial x} \qquad \frac{\partial N}{\partial x} = \frac{-2xy}{\partial x}$ ie $\frac{\partial M}{\partial y} \neq \frac{\partial N}{\partial x} = \frac{-2xy}{\partial x}$ ii $\frac{\partial M}{\partial y} \neq \frac{\partial N}{\partial x} = \frac{-2xy}{\partial x}$

×	$\partial M - \partial N = 4xy$
·	$\frac{\partial M - \partial N}{\partial y} = 4xy$
·	0
	1 (DM - DN) = 1 X424 = -4 = +(2)
-2 lega_	$\frac{1}{1} \left(\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} \right) = \frac{1}{7} \times 42y = -\frac{4}{2} = f(x)$
March.	[-4dx -4009x .
-	$I \cdot F = e^{\int \frac{\pi}{2} dx} = e^{-4logx} = \frac{1}{x^4}.$
	(-1) (-1) (-1) (-1) (-1) (-1) (-1) (-1) (-1) (-1) (-1) (-1)
	503 204/
	$\frac{1}{10} = \frac{y^2 - e^{-1/2^3}}{2x^3} dx - \frac{4}{10} dy = 0 - 2$ $\frac{1}{10} = \frac{y^2 - e^{-1/2^3}}{x^3} dx - \frac{4}{10} dy = 0 - 2$ $\frac{1}{10} = \frac{y^2 - e^{-1/2^3}}{x^3} dx - \frac{4}{10} dy = 0 - 2$
	χ^3 χ^4
	· Sol ⁿ is
	- 81 (COM - ON) - F(x) a for of a chance
	E JANAN
	$y^2 \int x^3 dx - \int \frac{e^{1/x^3}}{x^4} dx = e$
	2/ 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	$= \frac{1}{2x^2} + 3 \left(\frac{-1}{2x^2} \right) + 3 \left(\frac{e^t}{2} \right) + 3 \left($
	= dt = -3
	do
	$= \frac{1}{2} \frac{y^2 + e^{1/2x^3}}{1 + e^{1/2x^3}} = 0.$ $= \frac{1}{2} \frac{dx}{1 + e^{1/2x^3}} = 0.$
	$\frac{3}{20c^2} \cdot \frac{3}{3} = \frac{-dr}{3}$
	Fre out 19- Fred March
Q.	Solve (xy3 +y)dx + 2 (x2y2+x+y7) dy = 0 -1.
	NETT THE NET THE
Ans.	$m \circ M = xy^3 + y \cdot N = 2x^2y^2 + 2x + 2y^4$
	$\frac{\partial M}{\partial y} = \frac{32cy^2 + 1}{2} = \frac{\partial N}{\partial x} = \frac{4xy^2 + 2}{2}$
	$\frac{8M}{3y} = \frac{3xy^2 + 1}{3x} = \frac{2xy^2 + 2x + 2y^4}{3x}$
-	With the same of t



$$\frac{\partial M}{\partial y} \neq \frac{\partial N}{\partial x} \Rightarrow 0$$
 is not exceed

$$\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} = 3xy^2 + 1 - 4xy^2 - 2$$

$$\frac{1}{m} \left(\frac{\partial M}{\partial y} - \frac{\partial N}{\partial y} \right) = \frac{1}{y(2xy^2+1)} - \frac{1}{y} = \frac{1$$

$$\frac{mb}{m} = xy^{4} + y^{2}; \quad N = 2x^{2}y^{3} + 2xy + 2y^{5}.$$

$$\frac{(501)^{n}}{m} = \frac{(501)^{n}}{m} = \frac$$

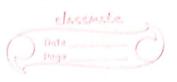
$$\frac{x^{2}y^{4} + xy^{2} + y^{6} = C}{2} = \frac{3}{3}$$

Ans. Here
$$M = y^{9} + 2y$$
. $N = xy^{3} + 2y^{9} - 42c$
= $70M = 43 + 2$; $3N = y^{3} - 4$

$$\frac{\partial M}{\partial y} - \frac{\partial N}{\partial z} = \frac{3}{3}\left(y^3 + 2\right)$$

$$\frac{1}{M} \left(\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} \right) = \frac{1}{3} \left(\frac{y^3 + 2}{y^3 + 2} \right) = \frac{3}{3} \left(\frac{y^3 + 2}{$$

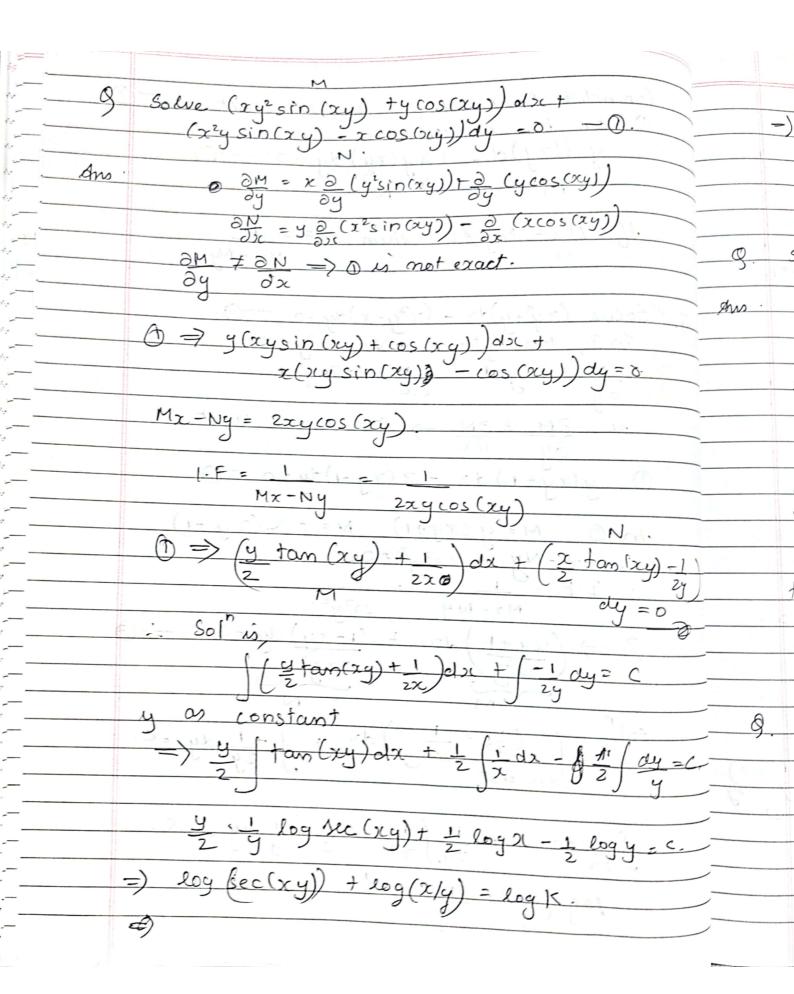
	$\therefore T \cdot F = e^{\int 3/y dy} = 1$ $y^3.$
	43.
	$ (y + \frac{2}{y^{32}}) dx + (x + 2y - 4x) dy = 0 $
	g y 32/
199	= (GNX+1) - 1: (NX - NX) 1 BD .
	(11-11) - (11-11
	$\frac{(y+2)}{9^2} \times + y^2 = c$
. (5	- 1 (241+4-190c + 2(1,4+14+1) - 1
<u> </u>	Solve (6x2+4y3+12y) dx + 3x (1+y2) dy =0.
· ^	- 6 M = xun + 02 . M = 20 43 + 224 + 343 .
- Ans.	$\frac{\partial M}{\partial y} = \frac{12y^2 + 12}{\partial x} + \frac{\partial N}{\partial x} = \frac{3 + 3y^2}{2}$
	$\frac{1}{N} \left(\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} \right) = 3 = f(x)$
	10 Coy con ox you
	C+(x)dx D= 3u + 3u = + 112
	$1.F = e^{\int f(x) dx} = x^3 = \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{1}{2}$
-	So 2 - 2 2 2 2 2 2 2 2 2 2 2 - 2 2 2 2 2 2 2 2 2 2 2 - 2 2 2 2 2 2 2 2 2 2 2 - 2 2 2 2 2 2 2 2 2 2 2 - 2 2 2 2 2 2 2 2 2 2 2 - 2
	$\int (6x^{5} + 4x^{3}y^{3} + 12x^{3}y) dx + \int ody = C$
-	y as const
	and to an in one exact
	$x^{6} + x^{4}y^{3} + 3x^{4}y = C$
	CT-5/1 - 146
	1 9 10 - MG
	60
(0)	1 (34 0) 0 (34 2) 0 (43 + 2) 0 (43 + 2) 0 (43 + 2) 0 (43 + 2)
	(See 32 4(93+2)

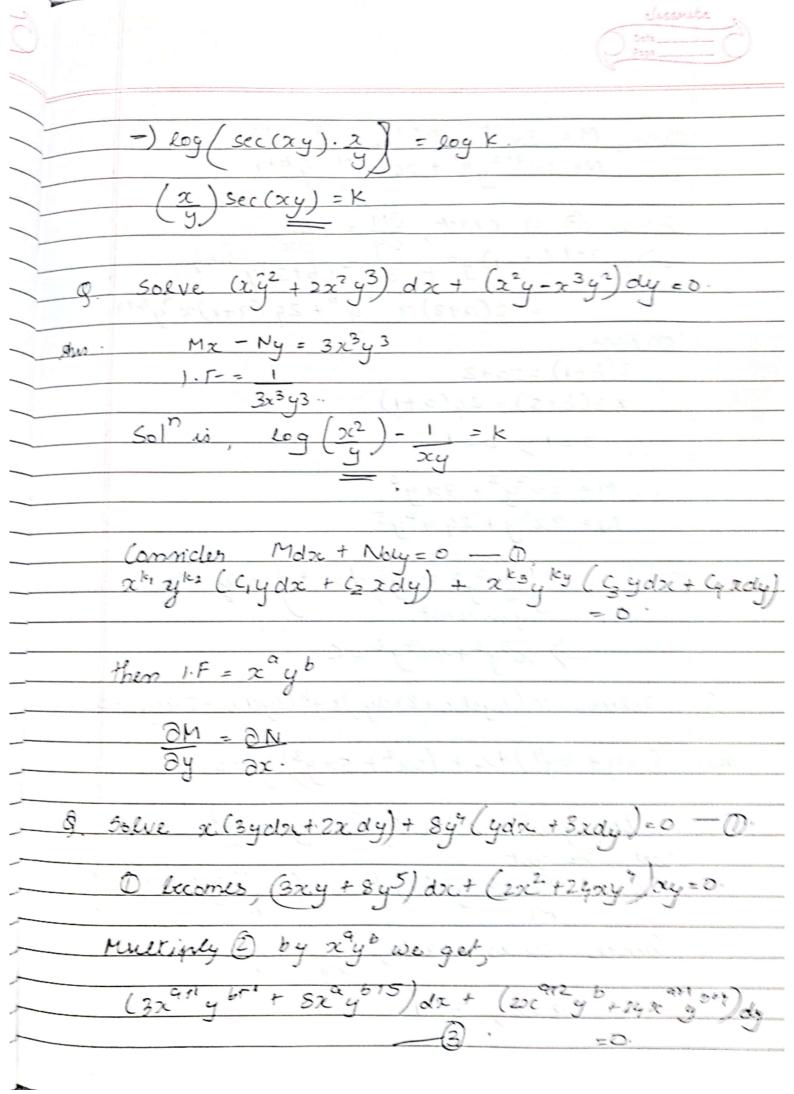


```
Consider Mdx + Ndy = 0, is not exact.

O can be weither as.

y f(xy) dx + xg(xy) dy = 0
 of Mx-Ny to then I.F = 1
Mx-Ny.
Solve (xy^2+y)dx - (x^2y-x)dy = 0 - (D - x^2y+x)
```





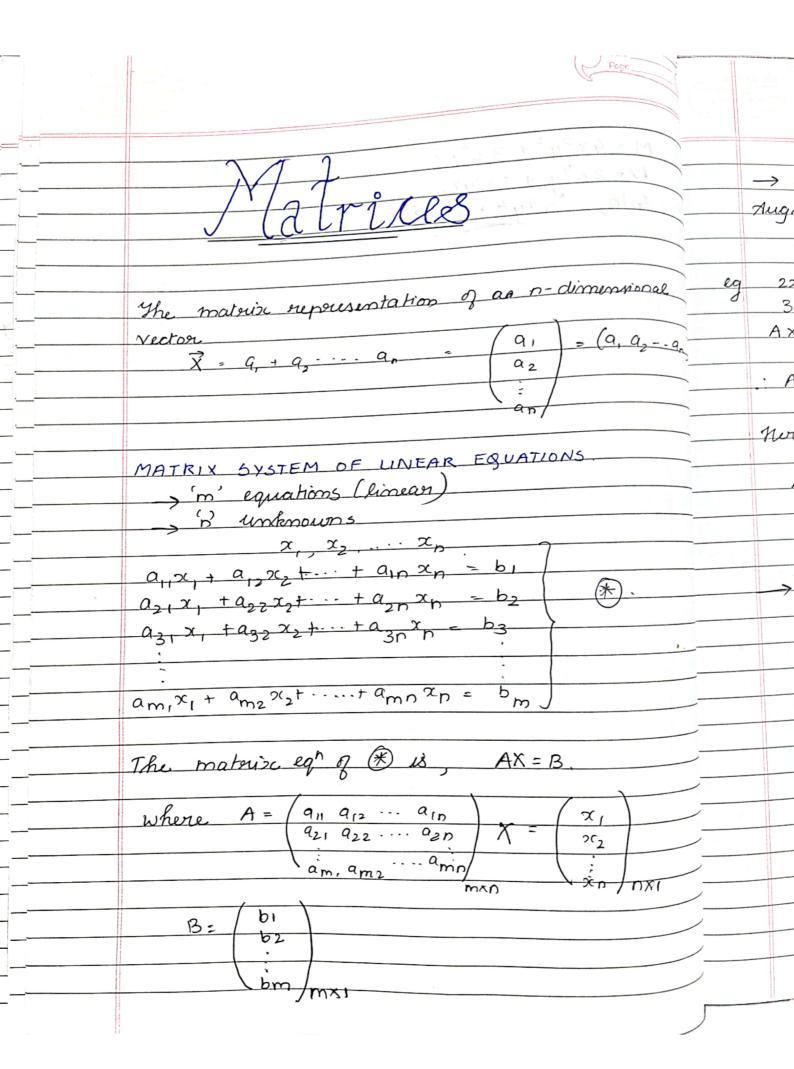
Mere M = 3x 9+1 bt 1 + 8x 9 bts

N = 2x 9+2 b + 24x 9+1 y b+4 Sino 3 is exact $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$ =) $\frac{\partial A}{\partial x} = \frac{\partial A}{\partial x} = \frac{\partial N}{\partial x}$ =) $\frac{\partial A}{\partial x} = \frac{\partial A}{\partial x} = \frac{\partial A}{\partial x} = \frac{\partial N}{\partial x}$ = $\frac{\partial A}{\partial x} = \frac{\partial A}{\partial x} = \frac$ 3(b+1) =2a+2 38(b+5) = 24(a+1) · a=1; b=1 .. M = 372y2+8xy6 N= 2234+242625. Sol is [(3)22,2 8)246)dx + fody = C. => x3y2+4x2y6=C Q Solve. x (4ydx. + 22dy)+ y3 (3ydx +5xdy)=0. Ans- (xy+3y9)dx+(2x2+5xy3)dy=0. -1). Multiply both sides of D by 20 b.

100 we get:

(42041 6+1+ 32 9 6+4) doc + (2x 4 5 + 52 9+1 6+3) Since @ is exact, DM = DN 9=2, b=1

M	$= 4x^{3}y^{2} + 3x^{2}y^{5}$ $= 2x^{4}y + 5x^{3}y^{4}.$ $\ln x^{4}y^{2} + x^{3}y^{5} = C$
So	$\frac{\ln x^4 y^2 + x^3 y^5 = c}{\ln x^4 y^2 + x^3 y^5 = c}$
negasi Ti	"The materia superessability of as or browns
(25 - 25	F (10) = (a) (
	MATERIX SYSTEM OF LINEAR ESUATIONS S'IO' EQUADIONS (Gineral)
	s and the second of the second
	10 = 02 00 + - + 25 0 = 10 1
	Ed The District of the District
	ad = qx ambit + 120 sail + 17 imp
	The makerine of g (B) is AK = B.
	1 - A (21 922 - 210) A - (21) A - (21)
10.	
	15m/ and



-> Consider AX = B
Augmented Materix: - (A B)
$2x_1 + 3x_2 = 6$
200 100 6
$A \times = B$ where $A = \begin{pmatrix} 2 & 3 \\ 3 & 1 \end{pmatrix} \times = \begin{pmatrix} x_1 \\ x_2 \end{pmatrix} B = \begin{pmatrix} 6 \\ 5 \end{pmatrix}$
: Aug matrix [A:B] on [A/B] on (AIB)
Mere $[A:B] = \begin{pmatrix} 23 : 6 \\ 31 : 5 \end{pmatrix}$
Mere $A:B = \begin{pmatrix} 23 & 6 \\ 31 & 5 \end{pmatrix}$ $AX = 0 \qquad 0 \qquad \text{folivial sol}^n g \text{ the homogenous}$ $0 \qquad nx1$
$AX = 0 \qquad y_1, y_2 \qquad y_n$ $C_1 y_1 + C_2 y_2 + \dots + C_n y_n$