Ramírez Cotonicto Luis Fernando 2 do. Parcial: Écuaciones Diferenciales 1- Resolver apticando Coesicientes Ideterminados a) y",y"+ /4 y = e [Sen3x - (0)3x) (D, D, T) A= 6, (26xx-(0)3x) la poneris coro... y pi)= kex [(Diox+Brnx) m2+m+ = 0 - (C(0) 3x + Dscn3x) 4 m2 + 4 m + 1 = 0 y 2 y = (E) + y p (E) 4-2+2m+2m+1=0 2~(2~+1)+1(2~+1)=0 4- (Circix)e + Kě [(Acon+ Bsenx) (2m+1)(2m+1)2=0- [c cw3n+ Dsen3n] m= -- 1 9,(t) 2 ((1+(2C)e-2x Dhora ... Gauss pura (1 (0x + B sm x) (auss . . . [(ccossx + Usen 3x) (ac) pau expurecial ke*

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6) y"+2 y 1+ y = x2 e-x
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Tenenus co-o solución general y (x) = (. F + P.I

Para enrontrar C.F resolucionos

Co-p. la Funcia

Ahora para encontrar la sol, particular (P.I). aplica-os coeferates indeterminados.

yp1: -aiexx2, Zaiexx -azexx+ Jazexx -azexx4

9" p= a, (le-x + e-x x2-he-x7) + a2 (e-xx3-6xx2+6x38)

Pune-us el valor.

a. (2ex+ex2-hex)+a2(exx3-6exx2+6exx)

103 (6-xx-86-xx)+156-xx)+5 (-0.6xx, 150.6-xx4)16-23,3

2 cm=0 602= 0

1200,=1

$$a - Resolver$$
 a plicando variación de parametros $a \cdot y'' - 2y' \cdot y = \frac{e^x}{1 + x^2}$

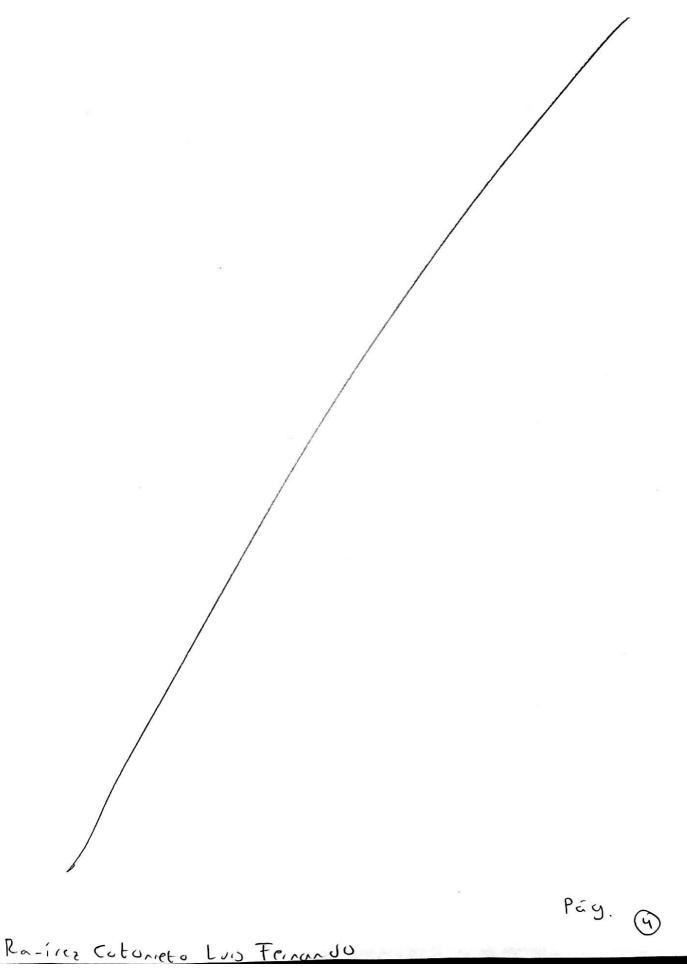
Reacondano cono...
$$y'' - 2y' + y = \frac{e^{x}}{x^{2} + 1}$$

$$V = \int \frac{e^x}{x^2 L_1} \times \frac{e^x}{x^2} = \int \frac{x^2 L_1}{x^2 L_1} = \int \frac{x^2 L_1}{x$$

| yp=-ex ln(x211) + xe +an (x)

y=(A+Bx)ex - ex ln(x2+1) frextan x

6)y"-6y'+30y = exTan3x



3- Resolver las significes ec. dif.

a) x2y"-2xy",2y=x3lnx

Tene-os la foira y"+ Py++ Qy=R

Dhura ...

i. x es parte de la Junion co~p.

i. y= w es timstor-ación

... La ecración setransfor-a a...

$$V'' + \left(-\frac{2}{x} + \frac{2}{x}\right)V' = \log x$$

$$V = \frac{x^2(\log x - 1)}{2} - \frac{x^3}{4} + C_1 x + C_2$$

b) (1+y)
$$y'' = (y')^2$$

$$\frac{(1+y)\partial^2 y}{\partial x^2} = \frac{\partial y}{\partial x}$$

Poncous $\frac{\partial y}{\partial x} = y$

$$\frac{\partial^2 y}{\partial x^2} = \frac{\partial y}{\partial y}$$

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Intergence as bost lad

$$\int \frac{dv}{dv} = \int \frac{dv}{(1+v)}$$

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$$V = e^{2n(1+v)} + C$$

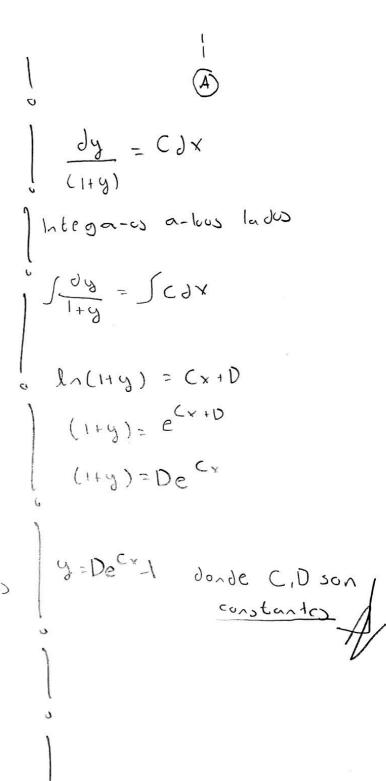
$$V = e^{2n(1+v)} + C$$

$$V = C(1+v)$$

$$\frac{dv}{dx} = C(1+v)$$

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$$\frac{dv}{dx} = C(1+v)$$



Pag 6

En el cálculo diferencialila curvatura de una curva representada por y = f(x), se de fine co-o sigue: $k = \frac{y''}{(1+(y')^2]^{3/2}}$, si k = 1, ccuánto vare y = f(x)?

k = 1 $y'' = [1 + (y')^{2}]^{3/2}$ $V = (1 + V^{2})^{3/2}$ $V = (1 + V^{2})^{3/2}$ $V = (1 + V^{2})^{3/2}$

Entunces

sec20 do = (1+ tan20)3/2 = sec30

Entences cosedo=du-Scosodo= Sdi-

seno=t

⇒ & = sen-1(t)

C030= J1- F2

g'=tano = t

y(b) = 5 t di = 51-62

Pag