Homogenea: Liegas a vass sepasables loess.  $tf(r,y) = f(t, t^n y)$ 

Ves Métod de solverón de Bustago

Si es homogenea:  $u = \frac{y}{v} \quad o' \quad v = \frac{x}{y} \quad \text{Si} \quad u = \frac{y}{v}$ 

Deferminas solución de (x+1) dx = (x-4) dy

 $U + X \frac{dY}{dX} = \frac{1+u}{1-u}$ 

EL BOGNOUTI, Llegas a lineal siempre

 $\frac{dy}{dx} + P(x)y = Q(x)y^n \rightarrow no es lined$ 

n & {0,1}

Lidds touk: u= g-n y dividic enter y" la ED

 $u = y^{-1} = \frac{1}{y}$   $y = u^{-1}$ 

EDO convectoble	
WE(10; 618	a sequeables
19	Ax +By+c La systitución debe
JA	sec linea
u = Ax +	39+C
14	
Jy = 2+ Jy -2 x	73 U= 9-2773
<b>7.</b>	
di	
$\frac{dx}{dx} = \frac{dy}{dx} - z$	$\frac{1}{\sqrt{\lambda}} = \frac{1}{\sqrt{\lambda}} + \frac{1}{\sqrt{\lambda}}$
Ju dr +2	=2+\sqrt{u'}
18	
du	
$\frac{du}{Jx} = J$	

 $u=\frac{x}{y}$   $v=\frac{y}{x}$  y=ux

2-5	, , , , , , , , , , , , , , , , , , ,
5) (y2 + yx) dx -7	(2 dy=0
- 2) 1/ 1/// 0/ /	J=u*
(u=x2 + ux2)dx -x	2(49x+491)-0
u2 x3,+ u x3 x - x2 4	$4x - x^2 du = 0$
42 X29 X - X394	
$\frac{\partial x}{x} = \frac{\partial u}{u^2}$	y a) 6 6 8 50 186
$\overline{x} - \overline{y^2}$	
$\frac{1}{100} \times \frac{1}{100} = 1 + \sqrt{x^2 - x^2}$	x>0
3 %	
	y= <b>u</b> ×
	y = udx + xdu
× 1.	
$xu + x^2 du = ux +$	1x2 = x2u2
x/4 + x2 dy = 4/x + >	
x, 4 x v ( = 4/x + )	107
XLu = V1-u2	×6 y6 (= 7×
	Ja-ne) K
udx=4+1	1-12
1 1 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	$acc (a-ca) =  a  \times + 0$
	$asc sen(a) =  n  \times + C$
	$\operatorname{Ascsen}(\frac{y}{x}) = \ln  x  + c$
1 1 1 1 1 1 1 1 1 1	

(3) $(x + ye^{y/x}) dx - xe^{y/x} dy = 0$ $y(1) = 0$	
13)	
$u = \frac{y}{x} \qquad y = u \times dy = u dx + x du$	
S	
(x + uxe ) dx - x e (udx + x du) = 0	
xdx true dx - xe udx - x2e du=0	
$x dx - x^2 e du = 0$	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
$dx = xe^{4}dx$	
$\frac{\partial x}{x} = e^{t} du$	
11/X1 = ex + C	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
$  \mathbf{n}   \times   \mathbf{n}   = e^{\sqrt{\mathbf{x}}} + C$	
Eva[Ja110 7(1)=0	1 1 5 5 1 1 1
, , , , , , , , , , , , , , , , , , , ,	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
$ a A  = e^{0/4} + C$	1 1 1 1 1 1 1
$v = 1 + C \Rightarrow C = -1$	
	1 1 1 1 1 1
$\ln  x  = e^{y/x} - 1$	

16) 
$$\frac{17}{1x} - 9 = e^{x}y^{2}$$
 $y^{2} \frac{17}{1} - 1 = e^{x}$ 
 $u = y^{2} \Rightarrow \frac{1}{2y} - \frac{1}{2} \Rightarrow 0 = y^{2}$ 
 $\frac{1}{2x} - \frac{1}{1} = e^{x}$ 
 $u = y^{2} \Rightarrow \frac{1}{2y} - \frac{1}{2} \Rightarrow 0 = y^{2}$ 
 $\frac{1}{2x} - \frac{1}{2} = e^{x} \Rightarrow \frac{1}{2x} + u = e^{x} \Rightarrow p(x) = +1$ 
 $e^{x} = e^{x} + e^{x}$ 
 $e^{x} = e^{x} + e^{x}$ 
 $e^{x} = e^{x} + e^{x}$ 
 $u = \frac{1}{2}e^{x} + e^{x}$ 
 $u = \frac{1}{2}e^{x} + e^{x}$ 
 $u = \frac{1}{2}e^{x} + e^{x}$ 

0) x dy	2			1
8) x 39 - (1+x)	y = xy		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1
	1 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1
87 Y _ Y	1_ \12	14	1-2 /y 4-1/1+1\ 1	1
Jx X		$\frac{1}{x}$	$= \frac{y^2}{3x} + \frac{y'}{1+\frac{1}{x}} = 1$	1
1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1			1 2
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1.
1 2 mil - 1/1+1	11-1	14 1 1 1 1 1 1 1 1 1		-
3 20 × 20 ( 5	*) - 1 -> 3	$\frac{dq}{dx} + u\left(41 + \frac{1}{x}\right) = -1$	$u = \frac{1}{y}$	1
			4-9	1
	1 1 1	P(x) =+1+1Q(x)=	1 1 1 1	1
		*	$\frac{\partial u}{\partial y} = -\frac{1}{y^2}$	1 1
1111	dx law			t (
6	$= e^{-x + \ln  x }$	$= \rho^{\chi} \cdot \chi$	79=-y2d4	1
				1
		<del></del>		1
				1
dxex	<b>u</b> _ <b>x</b> \			1
$\frac{\partial x e^{x}}{\partial x}$	<u>u</u> = - x e <sup>x</sup>			1 1 1 1 1 1 1
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	$\frac{\mathbf{u}}{\mathbf{u}} = -\mathbf{x} e^{\mathbf{x}}$	)X En el 1	660 integran sin simplifican	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			660 integran sin simplification	
×e.		90		
×e.	$\int_{C} u = -xe^{x} dx$	90	« qué no es vol. da la	
×e.	lu = -xex	7	« qué no es vol. da la	
×e.	$\int_{C} u = -xe^{x} dx$	90	« qué no es vol. da la	
×e.	$\int_{C} u = -xe^{x} dx$	7	« qué no es vol. da la	
×e.	$\int_{C} u = -xe^{x} dx$	7	« qué no es vol. da la	
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×e.	$\int_{C} u = -xe^{x} dx$	7	« qué no es vol. da la	
×e.	$\int_{C} u = -xe^{x} dx$	7	« qué no es vol. da la	

1) X <sup>2</sup>	1 - 2 :	(y=3)4	1	y(1) = 1 2	; ;	1 (	1 1 1 1	
	JA			2	1 1			
y-4 d	y - 2 X X y3	= 3	u= 9	=> du =	-3 y4	=> by=	34 du	
1 1	1 1 1			1 1 1 1				
~3 d4	- <sup>2</sup> u =	$\frac{3}{\chi^2}$ $\Rightarrow$	dy +2 1	4 = -1		1 1		
JX	×	X <sub>5</sub>	0 X 3 X	×		(x) = 2	Q(x	-7 X1
1 1 1 1 1 1	35204	= e lalxi	3 × 1/3	1		1 1		
1 1	d x2/3 4	$= \frac{-\chi^{1/3}}{\chi^2}$		3-7-3				
1 1	du	X2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1 1	x2/3 du:	= -x"d)	<b>K</b>	1	-4 41 s	= -1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 k 1 1 k 1 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1
1 1 1	1 <sup>2/3</sup> 4 =	- X		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1	f 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 t					1 1 1	. !		1 1 1
1 1	X3/3 4 =	$\frac{43 \times 1/3}{1/3}$	+( =>	u= 3×	13 +0	>> <u>1</u> =	3 X	3 + C
1 1	1 1 1 1 1 1 1 1 1	<del>/1</del>	1 1 1		1 1 1 2 1 1 1 1 1	4,	<u> </u>	<b>€</b> √3
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	$y = \sqrt{\frac{3}{x}}$	C			1	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	a cagué	eh e	despe	e de d	Jy		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
1 1	1 1		1 1 1		1 1	1 1 1	1 1	1 1 1

2.5 solución ED Pos sustitución,

		}	1 1	† 1 1 t	u =	×	V= Xy	1	f ( 1
2.5		1 1 1	1 1	1 1	; ; ; ; ; ;	1 1	1 1	1 1	
3) xdx + (y-2)	x) dy = 0	t t t		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1	1 1			
3) (4)				1					1 1 1
				1 1	<u> </u>			1 1	1 1 1
y = u X	=3 27 =	u t	× du	<b>=</b>	dy = uJ	x+xd	u J	† ( 1 2	1 1
	) X	<del>!</del> <del>!</del> <del>!</del> <del>!</del> !	0 *	† ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	1 1	1 - 1	1 1	1 1	1 1
		1 1		1 1					
x dx + ( ux - z x		1		1 1	1 1	1	1 1 1	1 1	1 1
X 0 X + C 4 X - 2 X	) Luox + xa	,u)≥v,	1 1	1 1	1 1 1	1 1	1 1 1	1 1 1	1 1
$\forall dx + [(u-z)x]$		\	1 1	1 1	1 1 1	1 1 1 1 1 1	<u> </u>	! ! !	1 1
~ v ^ + [(u - c) X]	w x + x d	4)20	1 1	1	1 1 3	1 1		1 1 1	1 1
Xdx + xulu-z)d	X + v2/4-2	) d u = 0	)	1 1		1 1			1 1
		1 1 1		1 1		1 1 1	1 1 1	1 1 1	1 1
X[1+410-27]dx	+ ( u -7) x20	) v = 0	1 1	1 1 1 1	1 1 1 1 1 1	1 1		1 1 1	1 1
	1 1 1		1 1	1 1	1 1 1	1 1 1 1	1 1	1 1 1 1 1 1	1 1
X(u-1)2dx + (1	u-2) x2 du	= 0	1 1	1 1 1 1 1 1		1 1		1 1 1	1 1
						1 1		1 1 1	
<u>u-2</u>	$du = - \times dy$	(	1	1 1		1 1			1
(u-7)2	$\lambda_{4} = -\frac{\times \lambda_{2}}{\times^{2}}$	1 1 1	1 1	1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1
		1 1 4	1 1	1 1	1 1	1 1	1 1	1 1 1	1 1
	3			1	1 1	1 1		1 1 1	1
	1 1 1	1 1 1	1 1	1 1		1 1	1 1	1 1 1	1 1
i i i i i i i i i i i i i i i i i i i	1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1	1 1 1 1	1 1 t 1 1 t	1 1 1 1	1 1 1	1 1 1 1 1 1	1 P
				1 1		1 1	1 1 1	1 1 1	1 1
	1 1 1	f 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1	i i i i i i i i i i i i i i i i i i i		1 1		1 1	1 1
	1 1	1 1 1	1 1	1 1	1 1 1			1 1	
	1 1	1 1 1	1 1	i i 1 I	1 1 1	1 1	1 1 1	1 1 4 1 1 1	1 1
	1 1 1	1 1 1	1 1	i i i i i i i i i i i i i i i i i i i	1 1 1	1 1	1 1 1	1 1	1 J I 1 I I
			1 1	1 1	1 1 1	1 1	1 1 1 4 4 4 1 1 1	1 1	, I P
			1 1	1 1	1 1 1	1 1	1 1 1	1 1	1 1 1
		1 1	1 1	1 1	1 1 1	1 1	1 1 1	1 1	1

$\frac{25}{22} \frac{1/2}{3} \frac{1}{\sqrt{3}} \frac{1}{\sqrt{3}} + \frac{9^{3/2}}{\sqrt{3}} = 1$	<b>Y</b> (0)	<b>= 4</b>			
JX	1 1 1 1	1 1			1
	1 1 1 1 1 1 1 1 1 1 1 1	1 1	1 1 1		1 1
J9 17 1 4 19 = 1	ルニ リダ	14_	1		
17/1/ + 419 = 1	1 1 1 1	17	214		
· · · · · · · · · · · · · · · · · · ·	t 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1	1 1
		44	= 2497 du	) t :	1 b
$uzudu + uz \cdot u = 1$		1 1		1 1 1	1 1
JX		dy	= 2414	1 1 1	
		1 1 1		1 1 1	1 1
$2u^{2}\frac{du}{dx}+u^{3}=1$				1 1	1 1
		1 1		1 4 1	1 1
	1 1 1 1	1 1 1			1 1
$2\alpha^2du = dx(1-u^3)$	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1			1 1 1
2 atau = oxcitus	1 1 1	- 1 1	1 1 1		1 1
17 2 42 14 - 10 1 x 1	7 =	1-43	1 1 1	1 1	
$\int \frac{2u^2}{4-u^2} du =  n x $		-zu2di	1 1 1		
	95=	-2u a	1 1 1	1 1	
$-\int_{2}^{\infty} \frac{dz}{z} =  v  \times  v $	1 1 1	1 1 1	1 1 1 1 4 1 1 1	1 1 1	1 1 1
) 2	1 1 1	1 1 1	1 1 1	1 1	1 1
		1 1	1 19 1	1 1 1	1 1 1
- In 1 = 1 = In 1 x 1		1 1	1,0 =	1 1 1	1 1 4
	1 1 1 1	1 1		- 1	1 4 1
-1.1.4 (-1.3.1 )	1	1 1 1		i 1 t	
- [n] 1-(Jy])3 = [n [x]	1+0	1 1 1	1 1 1	1 1 1	1 1
		1 1 1	1 1 1 1	1 1 1	1 1
Tc = In   x (1	1- y 59 )	1 1	, i i i	1 1 1	1 1 4
	3333	1 1	i i i i i	1 1 1	1 1 1
		1 1 1	1 1 1	1 1	1 1
	1 1 1	1 1 1	1 1 1	1 1	1 1
		1 1		1 1 2	1 1
		1 1	1 1 1	1 1 1	1 1
		1 1	1 1 1		1 1
		1 1 1			
	1 1 1	1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1	1 1
		1 1 1	1		
					100