```
Characteristics - 2 worked problems
                    M_{\pm} - 3M_{\times} = 1 - \times \qquad M(x,0) = \chi^{2} + 1
ex 1
              soln: dx = -3
                        X = -3t + X_0 \longrightarrow \frac{du}{dt} = 1 - X
                                                      \frac{du}{dt} = 1 + 3t - x_0
                        X0 = X+3+
                                                            M=++3+2-xo++1
                                                       Su(xo,0)= K 3 => K=x0+1

(u(xo,0)= x0+1)
                                                   \left( A = \left( + \frac{3}{2} + ^2 - \left( x + 3 + \right) + + \left( x + 3 + \right)^2 + \right)
             Simlifying M=++3+2-x+-3+2+x2+6x++9+2+1
                            M = t + \frac{15}{2}t^2 + 5xt + x^2 + 1
             M_{+} + M^{3}M_{X} = 0 4 |x,0| = x^{1/3}
             solve di = 143
                                                du = 0

    \begin{cases}
      M(x_0, 0) = C \\
      M(x_0, 0) = X_0
    \end{cases}
    = X_0

    M = X_0

                   \frac{dy}{dt} = X_0
                    x = x_0 + x_0
                                                      \Rightarrow \left( u = \left( \frac{x}{t+1} \right)^{1/3} \right)
                   X = X0 (++1)
                       X_0 = \frac{x}{4+1}
```

12.2 #1

ME - (2M+1/Mx = 3 M(x,0= F(x)=1-x

dx = -2M-1

dy = 3

M=3++C

M(ko, 0) = C =7 (21-X0

4 (x0,0 = 1-X0

dy = -6+-3+2x0 = M = 3++1-x0

X = -3(23++2x++ K

x(0/= x0 => K= x0

X=-3+2-3+ +2x++x.

X=-3+2-3+ + (2++1) Xo

 $X_0 = \frac{X + 3t^2 + 3t}{2t + 1}$ 

-- M= 3++1 - X +3+2+3+

M= 6+2+3++2++1 - x-3+2-3+

 $4 = \frac{3t^2 + 2t + 1}{2t + 1}$ 

## Characterstics

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ferfall frencht de gron van zogen versken station, en feren gegen gegen gevalle french en verskelle station.	12.2 £ 3	
	My + (M++) Mx =1	M (xp)= f(x1= x+1
	Sol	
	dx U = 44t	
er anneter (talversom gever remaining behåder) vill Chillip Edistribility (s.e.	M. A. C.	CO-MA REPORT OF CHANGES CONTRACTOR STATES AND AND STATES AND
《《···································		$\mathcal{M} = ++ C$
Particular Committee of Committ		
	The second of th	Su(x0,0)= C => C= x0+1
	dy . 26 + X +1	$= \left( M = t + x_0 + 1 \right)$
	at .	
	x=1°+x0++++K	
NA THE DANKS AND A STATE OF THE	Description of the state of the	
	K(ol=Xo => Ko=K	等。可以此类的企业中的企业是一个企业的企业,但是在企业中的企业的企业,但是一个企业,是在企业,是一个企业,是一个企业,是一个企业,是一个企业,是一个企业,是一个企业,是
	$x = t^2 + x_0t + t + x_0$	
		$M = \xi + \frac{\chi - \tau^2 + \tau}{\xi + \tau}$
and helical and all programments of collections in which the collections will be considered to the collections of the collectio	$\begin{pmatrix} x_0 = \frac{x-t^2-t}{t+1} \end{pmatrix}$	Harris and the same of the sam
er-Miller Stille at Marie Rei (S. Miller Street Grant Miller Very per voor Marie Village versche		+2+++x-+2++++1
		++1
engel valve og vindska (1902 skalenska kreene og skalenska og skalenska kreene		
athal anget 57% of Maria Maria Andrews ( - April 1876 or phase) all proceedings (Conseq 4, ph	Aus	$A = \frac{X + \xi + 1}{1 + \xi + 1}$
unit, ring Class von Bergen (Blass avenit in verklichten Bergen). Dem mit Marie ver stell Milj verster V. der M	The state of the s	
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#5	11 (x p) = +(x) =
	Sh
	du z 2 t m
	x(0/= x0 => (2 x0
	(X2 ++X0) - m 2 + 3
	$M = \frac{1}{2}$
	4 = 7
	(M(100) = - Ko
	-Xo
	Ko = X-F
	A STATE OF THE PARTY OF THE PAR
Acceptance	
many y	