$\frac{1}{2}$  $\frac{\partial u}{\partial x} = \frac{\partial u}{\partial x} - \frac{\partial u}{\partial x}$ 

( نَم يَعُومَن مَ لِلْعَادِلَهُ الْدَمِيلِيهِ )

F(x) 2(x) dx + F(x) 2(x) dy = 0

ولا عَلَىٰ وُهِلُوا او حِلْوا

exact 5! Test

My = Nx = at

م ناتل كل طرن لوهده باسبد له الله عيبه

general form:

0 th sta =1

(5) ba) 2 da) 3 e spanda = max

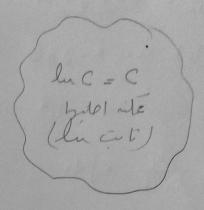
die out + p(x) y = Q(x)

@ mas.y. I mas Q as da

THE + DEN & = 6(1) A, y- aby + pa) / = Qa) let y'= u , du = (1-n) y dy

$$\int_{2}^{2} \frac{1}{x^{2}} dx + (1+x^{2}) dy = 0$$

$$\int_{2}^{2} \frac{1}{x^{2}} dx = \int_{2}^{2} - \int_{3}^{2} dy$$



$$3 - x \frac{\partial x}{\partial x} = 3_5 + 3_1$$

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$$\int \frac{dy}{y-y^2} = \int \frac{dx}{x+1}$$

$$\frac{1}{8(1-9)} = \frac{A}{8} + \frac{B}{(1-9)}$$

$$A = 1$$

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$$\int \frac{1}{y} + \frac{1}{1-y} dy = \ln (x+1) + C$$

$$\ln y + \ln (1-y) = \ln (x+1) + C$$

$$\ln (\frac{y}{1-y}) = \ln ((x+1) + C)$$

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$$\frac{y}{1-y} = (x+1) + C$$

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$$3) \frac{dy}{dx} = (x + y + 5)^2$$

let 
$$u = x + y + 5 \rightarrow \frac{du}{dx} = 1 + \frac{dy}{dx}$$

$$\frac{dy}{dx} = 1 + u^2$$

$$tan^{-1}u = X + C$$

$$u = tan(X + C)$$

$$x+y+5 = tan(x+c)$$

$$\frac{d}{\sqrt{\chi^2}} = \frac{dx}{dx} = \frac{dx}{dx} = \frac{dx}{dx}$$

$$\frac{1}{u+x}\frac{du}{dx} = \frac{u^2x^2}{x^2u+x^2} = \frac{u^2}{u+1}$$

$$\frac{1}{1} \frac{du}{dx} = \frac{u^2}{u_{+1}} - u = \frac{u^2 - u^2}{u_{+1}} - u = \frac{u}{u_{+1}}$$

$$\frac{dx}{dx} = \frac{e^{3x}}{e^{2y}}$$

$$\frac{e^{x+\beta}}{e^{x+\beta}} = \frac{e^{x}}{e^{x}}$$

$$\frac{e^{x+\beta}}{e^{x+\beta}} = \frac{e^{x}}{e^{x+\beta}}$$

$$N = X + lu + + Siny$$
,  $N_x = 1 + \frac{1}{x} + Siny$ 

$$\frac{dx}{dy} + \frac{1-x_3}{x_5} A = x_5$$

$$b(x) = \frac{1-x_3}{x_5}, \quad b(x) = x_5$$

$$m(x) = e = e = e = -\frac{1}{3}ex(1-x^3)^{\frac{1}{3}} dx = -\frac{1}{2}(1-x^3)^{\frac{1}{3}} = \frac{1}{(1-x^3)^{\frac{1}{3}}} dx$$

$$\frac{1}{(1-x^3)^{\frac{1}{3}}} dx = \int \frac{x^2}{(1-x^3)^{\frac{1}{3}}} dx = -\frac{1}{2}(1-x^3)^{\frac{1}{3}} + C$$

$$\frac{(1-x_3)_{\frac{3}{2}}}{(1-x_3)_{\frac{3}{2}}} q = \int \frac{(1-x_3)_{\frac{3}{2}}}{(1-x_3)_{\frac{3}{2}}} q x$$

$$\frac{1}{(1-x^3)^{\frac{1}{3}}}y = \frac{1}{3} \left( \frac{1-x^3}{3} \right)^{\frac{1}{3}} dx$$

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

$$\frac{1}{(1-x^3)^{\frac{3}{2}}}y = -\frac{1}{2}(1-x^3)^{\frac{3}{2}} + C$$

$$y = -\frac{1}{2} (1-x^3) + C(1-x^3)^3$$

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$$\frac{dy}{dx} + y + \tan x = y^3 \sec^4 x$$
 $y^{-3} \frac{dy}{dx} + \tan x$ 
 $y^{-2} = \sec^4 x$ 
 $1et u = y^{-2} \rightarrow \frac{dy}{dx} = -2 y^3 \frac{dy}{dx}$ 
 $\frac{1}{2} \frac{dy}{dx} + \tan x$ 
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 $\frac{1}{2} \frac{dy}{dx} = -2 \cos^2 x$ 
 $\frac{1}{2} \frac{dy}{dx} = -2 \int \frac{\sec^2 x}{\sec^2 x} dx$ 
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192 = -2 Sinx + C x