Evaluación de Matemáticas par Ingeniería II

Ingeniería en Software

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	1. Resuelle la ecración por el método de segonación de variables
	5. $y' = \frac{5 \times 9}{9}$
	$\frac{dy}{dx} = \frac{5x}{y}$ $\frac{dy}{dy} = \left(\frac{5x}{y}\right) dx$
	$\int y dy = \int (\frac{5x}{y}) dx$ $y^2 = 5 \int x dx = \frac{y^2}{2} = \frac{5x^2}{2}$ $y^2 = 5x^2 + C/$
	6. $y' = \frac{1}{3}y$
00000	$\frac{dy}{dx} = \frac{3y}{3y}$ $\frac{dy}{dx} = \frac{3y}{3y}$
	$\int y dy = \int \frac{1}{3} \times 1$
14444	$\frac{9^2}{2} = 2 \times \sqrt{x} + C$

7. y' = 1x y $\frac{dx}{dy} = 1x y$ dy - Ix dx Ingtc = 3 $lny = e^{\frac{3}{3}} \sqrt{1}x^{3} + C$ $y = e^{\frac{3}{3}} \sqrt{1}x^{3} + e^{c}$ 4 = Ce3 3 1x3

8.
$$y^2 = x(1+y)$$

$$\frac{dy}{dx} = x(1+y)$$

$$dy = (x dx)$$

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

$$= \ln u = \frac{x^2}{2} dx$$

$$= \ln (1+y) = e^{x^2} dx$$

9.
$$(1+x^2)y' - 2xy = 0$$
 $(1+x^2) \frac{dy}{dx} = 2xy$
 $\frac{dy}{dx} = 2xy$
 $\frac{dy}{dx} = \frac{2xy}{(1+x^2)} \frac{dx}{dx}$
 $\frac{dx}{dx} = \frac{2xy}{(1+x^2)} \frac{dx}{dx}$

10.
$$xy + y' = 100x$$

$$xy + dy = 100x$$

$$dy = 100x - xy$$

$$dy = 100x - xdx$$

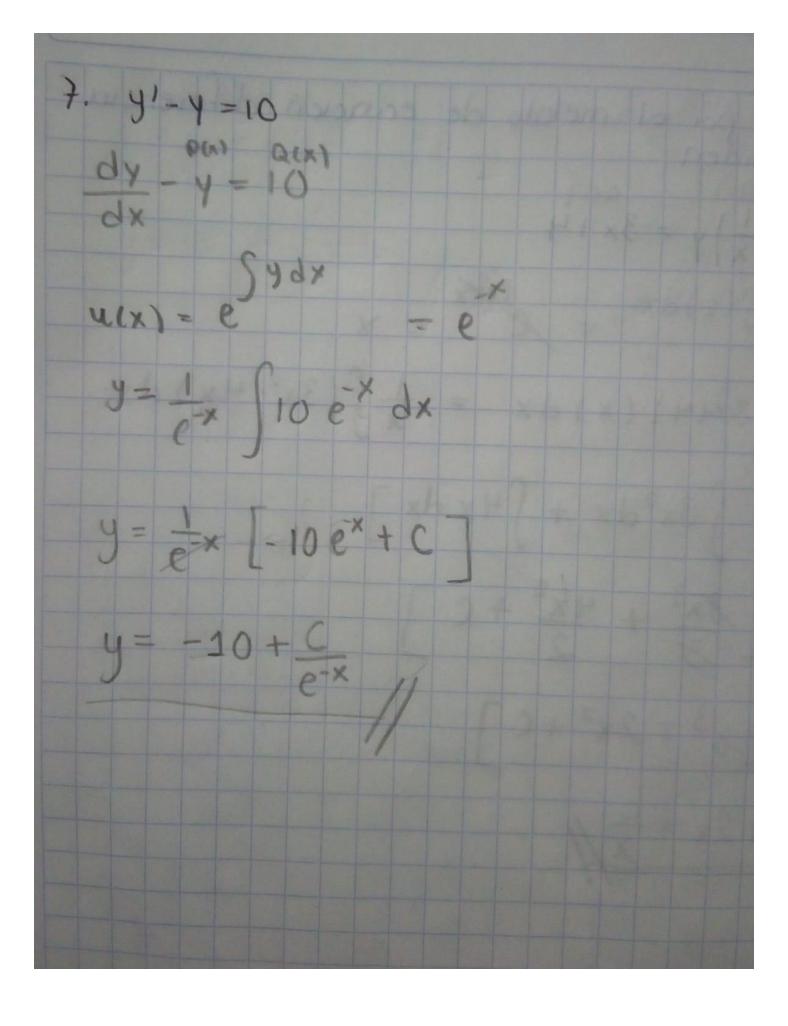
$$lny = 100 \int x dx$$

$$lny = 100 \int \frac{x^2}{2} dx$$

$$elny = \frac{x^2}{2} + 100$$

$$y = \frac{x^2}{2} + 100$$

2. Resuelve por el método de ecuación diferencial de primer orden 5. $\frac{1}{4} + \left(\frac{1}{x}\right)y = 3x + 4$ u(x)= estalax = elax = x $y = \frac{1}{x} \int (3x+4)(x) dx = \frac{1}{x} \int (3x^2+4x) dx$ y= 1 [3x2dx + [4xdx] y= 1 [3x3 + 4x2 + C] $y = \frac{1}{x} \left[x^3 + 2x^2 + C \right]$ y = x2 + 2x + x//



9.
$$(9+1) \cos x \, dx - dy = 0$$

$$((9+1) \cos x \, dx - dy = 0) \frac{1}{dx}$$

$$(y+1) \cos x \, dy = 0$$

$$\frac{-dy}{dx} + (y+1) \cos x = 0$$

$$\frac{-dy}{dx} + y \cos x + \cos x = 0$$

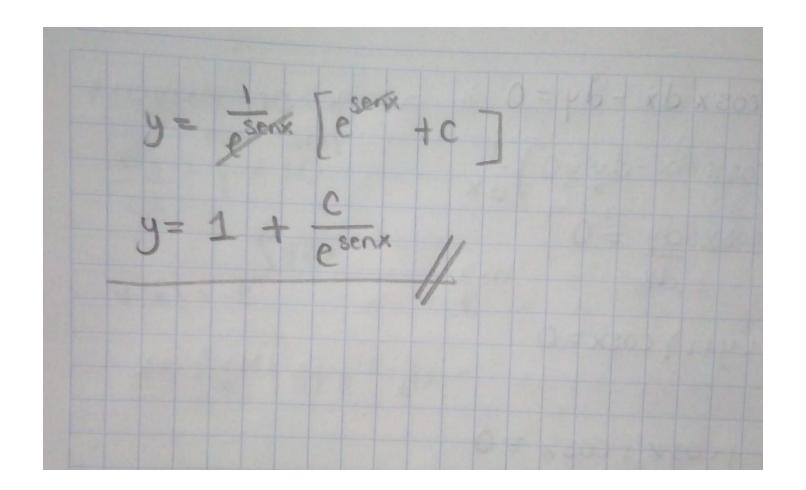
$$(\frac{-dy}{dx} + y \cos x = \cos x) (-1)$$

$$\frac{dy}{dx} + y \cos x = \cos x$$

$$\frac{dy}{dx} + y \cos x = \cos x$$

$$\frac{dy}{dx} + \cos x = \cos x$$

$$\frac{dx}{dx} =$$



11.
$$(x-1)y'+y=x^2-1$$

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

