



Nombre del alumno:

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Nombre del trabajo:

Calculo diferencial exponencial

Materia:

Calculo diferencial

Licenciatura:

Ingeniería en sistemas computacionales

Grado: tercer cuatrimestre

Grupo: "A"

Ejercicio 1

$$Y' - e^{2X-Y}$$

$$Y' - e^{2X-Y} = 0$$

$$Y' = e^{2X-Y}$$

$$Y' = e^{2X} \cdot e^{-Y}$$

$$\frac{Y'}{e^{-Y}} = e^{2X}$$

$$e^Y$$

$$\int e^Y dy = \int e^{2x} dx$$

$$e^Y = \frac{e^{2x} + c}{2}$$

$$\ln e^Y = \ln\left(\frac{e^{2x} + c}{2}\right)$$

$$Y = \ln\left(\frac{1}{2}e^{2x} + c\right)$$

Ejercicio 2

$$Y \frac{dy}{dx} = e^{x-y^2}$$

$$y \frac{dy}{dx} = e^x \cdot e^{-y^2}$$

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

$$e^{y^2} y dy = e^x dx$$

$$\int e^{y^2} d\left(\frac{e^{y^2}}{2}\right) = \int e^x dx$$

$$\frac{1}{2} e^{y^2} + c = e^x + c$$

$$e^{y^2} = 2e^x + C - C$$

$$e^{y^2} = 2e^x + c$$

$$y^2 = \ln(2e^x + c)$$

$$y = \pm \sqrt{\ln(2e^x + c)}$$

ejercicio 3

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

$$\frac{dy}{dx} = -e^{x-y}$$

$$dy = -e^x \cdot e^{-y} dx$$

$$\frac{dy}{e^{-y}} = -e^x dx$$

$$e^y dy = -e^x dx$$

$$\int e^y dy = \int -e^x dx$$

$$e^y = -e^x + c$$

$$y = \ln(-e^x + c)$$

ejercicio 4

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

$$\frac{dy}{dx} = e^{x+y}$$

$$dy = e^x \cdot e^y dx$$

$$\frac{dy}{e^y} = e^x dx$$

$$\int e^{-y} dy = \int e^x dx$$

$$-e^{-y} + c = e^x + c$$

$$-1(-e^{-y} + c = e^x + c)$$

$$e^{-y} = -e^x - c$$

$$-y = \ln(-e^x - c)$$

$$Y = -\ln(-e^x - c)$$