

$$\frac{d}{dx}(x^n) =$$

$$\frac{d}{dx}(\cos x) =$$

$$\frac{d}{dx}(\sin x) =$$

$$\frac{d}{dx}(\ln x) =$$

$$\frac{d}{dx}(e^x) =$$

$$\cos^2 x + \sin^2 x = 1$$

$$1 + \tan^2 x =$$

$$\cot^2 x + 1 =$$

$$e^{\ln u} =$$

$$\ln e^u =$$

$$\frac{d}{dx}(uv) =$$

$$\frac{d}{dx}\left(\frac{u}{v}\right) =$$

$$\frac{d}{dx}(u(v)) =$$

Verify $y' + 2y = 0$ given $y = 3e^{-2x}$

Verify $y'' + 4y' + 4y = 0$ given $y' = e^{-2x}$, $y'' = xe^{-2x}$

Solve for r given $y = e^{rx}$ and $4y'' = y$

Solve for C given $y' = 2y$, $y(x) = Ce^{2x}$, $y(0) = 3$

Solve for C given $y' + y \tan(x)$, $y(x) = (x + c) \cos x$, $y(\pi) = 0$

Find at least one solution

$$Y' = y$$

$$(y')^2 + y^2 = 1$$