

AP Calculus AB: Differential Equations

Name Key

Calculate the general or particular solution equation for each of the following differential equations:

<p>1) $\frac{dy}{dx} = 2xy$ let $e^c = k$</p> <p>$\int \frac{1}{y} dy = \int 2x dx$</p> <p>$\ln y = x^2 + c$</p> <p>$y = e^{x^2} \cdot e^c$</p> <p>$y = ke^{x^2}$</p>	<p>2) $\frac{dy}{dx} = \frac{2+y}{x}$ let $e^c = k$</p> <p>$\int \frac{1}{2+y} dy = \int \frac{1}{x} dx$</p> <p>$\ln 2+y = \ln x + c$</p> <p>$2+y = e^{\ln x } \cdot e^c$</p> <p>$2+y = k x$</p> <p>$y = k x - 2$</p>
<p>$\frac{dy}{dx} - 2y \rightarrow \frac{1}{-2} dy = \frac{1}{x} dx$</p>	<p>$\frac{dy}{dx} - 2x$</p>