

NAME & Major:

1. Find the derivative, $\frac{dy}{dt}$ of the following function where $k =$ some constant:

$$y(t) = t \sin(kt)$$

2. If $f(x, y) = \cos(x) \sin(y)$, find $\frac{\partial f}{\partial y}$.

3. Show that $y(t) = e^{-at}$ satisfies the equation:

$$\frac{d^2y}{dt^2} = a^2y$$

NAME & Major:

1. Find the derivative, $\frac{dy}{dt}$ of the following function where $k =$ some constant:

$$y(t) = t \cos(kt)$$

2. If $f(x, y) = \sin(x) \cos(y)$, find $\frac{\partial f}{\partial y}$.

3. Show that $y(t) = e^{at}$ satisfies the equation:

$$\frac{d^2y}{dt^2} = a^2y$$

NAME & Major:

1. Find the derivative, $\frac{dy}{dt}$ of the following function where $k =$ some constant:

$$y(t) = te^{kt}$$

2. If $f(x, y) = \cos(x) \sin(y)$, find $\frac{\partial f}{\partial x}$.

3. Show that $y(t) = \cos(at)$ satisfies the equation:

$$\frac{d^2y}{dt^2} = -a^2y$$