

Mathematics 300

Quiz 22

Name: _____

You must show your work to get full credit.

Let $y = x^2e^x$. Use induction to show the n -th derivative of y is

$$\frac{d^n y}{dx^n} = (x^2 + 2nx + n(n-1))e^x$$

In your proof be sure to state the base case that the induction step.