Math 2215 - Calculus 1

Homework #5 - 2005.10.04

Due Date - 2005.10.11

Show that the following functions satisfy the given relationship.

1. $y = e^{2x}, \quad \frac{dy}{dx} = 2y$
2. $y = xe^{x}, \quad \frac{dy}{dx} = y + e^{x}$
3. $y = \cos(ax) + \sin(ax), \quad \frac{d^2y}{dx^2} = -a^2 y$
4. $y = \tanh(x), \quad \frac{d^2y}{dx^2} = -2y + 2y^3$
5. $y = \operatorname{sech}(\sqrt{2}x), \quad \frac{d^2y}{dx^2} = 2y - 4y^3$