Class Exercise #11 1.050 Solid Mechanics Fall 2004

You are an 18.02 machine. You can take partial derivatives without knowing anything other than how to mathematically interpret the symbols. Given the two continuous functions;

$$g(x, \ ) = \frac{V(x)}{2I} \cdot \left[\left(\frac{h}{2} \right)^2 - y^2 \right]$$

$$f(x, y) = - \frac{M(x) \cdot y}{I}$$

where *V(x)* and *M(x)* are continuous functions of x related by $\frac{d}{dx} M(x) = -V(x)$ and where *h* and *I* are constants,

Show that: $\frac{\partial}{\partial x} f(x, y) + \frac{\partial}{\partial y} g(x, \ ) = 0$