EPS 236, Fall 2007: Geological fluid mechanics

**Homework number 3**

Due Monday September 17

6. Show that the continuity equation can be written as

$$\frac{1}{V}\frac{DV}{Dt} = \nabla \cdot \mathbf{u}$$

where $V$ is volume. Recall the chain rule. Explain why $\nabla \cdot \mathbf{u} = 0$ if the fluid is incompressible.