Take the divergence of both sides of Faraday's law:

$$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$$

What do you get?

A. 0=0 (is this interesting!!?)

B. A complicated partial differential equation (perhaps a wave equation of some sort ?!) for **B**

C. Gauss' law!

D. ???

Take the divergence of both sides of Ampere's law:

$$\nabla \times \mathbf{B} = \mu_0 \mathbf{J}$$

According to this, the divergence of **J** =

A. $-\partial \rho / \partial t$

B. A complicated partial differential of B

C. Always 0

D. ??

According to the principle of charge conservation, the divergence of **J** =

A. $-\partial\rho/\partial t$

B. A complicated partial differential of B

C. Always 0

D. ??