Math 224 Quiz 22 Name: _____

April 27, 2004

Show all work for credit.

1. Assuming that the appropriate partial derivatives exist and are continuous, prove that $\operatorname{div}(\nabla f \times \nabla g) = 0$, where f and g are scalar fields.

2. Find a parametric representation for the surface S, where S is the part of the plane $z = 5$ that lies inside the cylinder $x^2 + y^2 = 16$.